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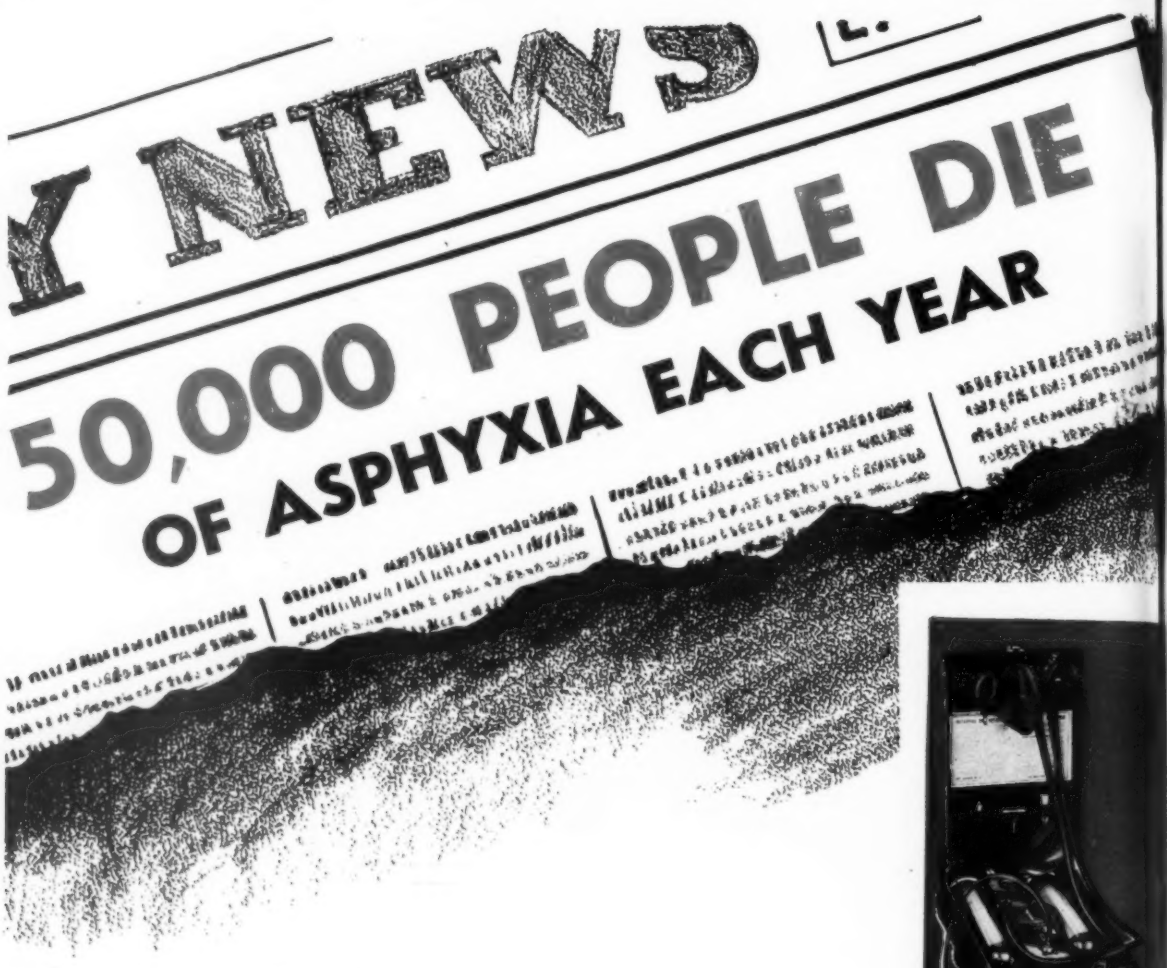
FIRE ENGINEERING

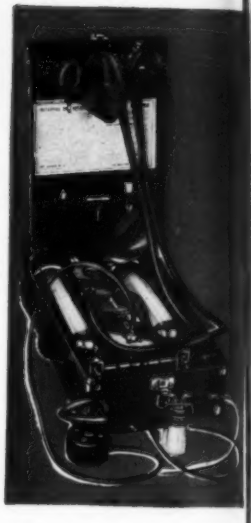
The Journal of the Fire Protection Profession Since 1877

AUGUST, 1945

"CONVENTION IN PRINT"

A CASE - SHEPPERD - MANN PUBLICATION





Many of whom—
Could be Saved
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EMERSON
RESUSCITATOR

With the famous dual apparatus, you can assist independently two victims of smoke suffocation, electric shock, gas poisoning, drowning or other asphyxia at once. That's why many departments are putting in this double-purpose unit which costs only a little more than the famous single unit EMERSON RESUSCITATOR.

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How FEDERAL Sirens are designed for life-saving dependability

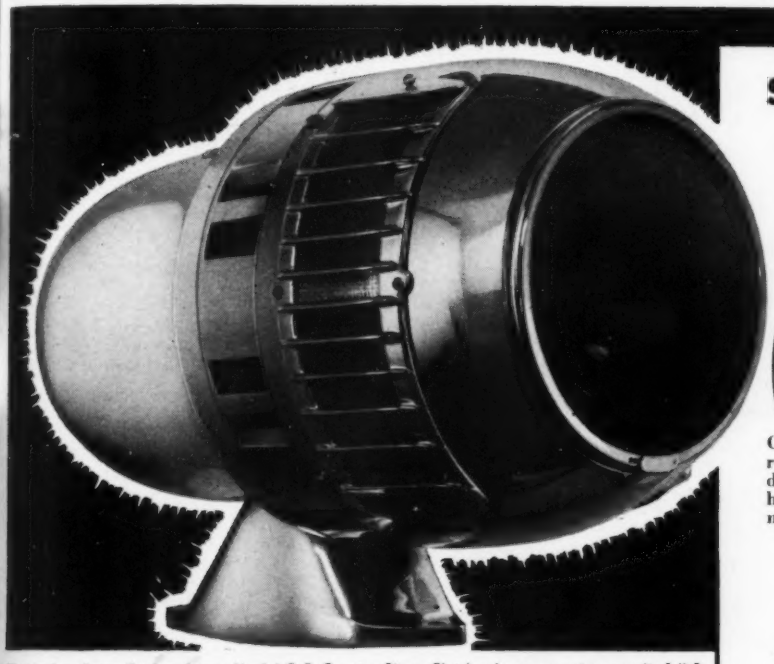

Illustration shows the handsome Model C-5, Coaster Siren. Clutch release on rotor permits full 3-minute roll; electric coaster brake if desired. Flashing red light or grille front. Size: 16" long, 9" high; weight 25 lbs. Massive; durable; one of Federal's most powerful sirens for emergency vehicles.

The instant that separates safety from danger is so short that a vehicle siren must have the clearest, most recognizable tone possible, and the siren must be absolutely dependable.

Federal Sirens are meticulously designed and accurately built. The results are instant starting, long life, dependability, and a deep, powerful tone that penetrates far ahead, through other traffic sounds. For penetration, clear, true pitch is essential. Federal gets this with square, knife-edge ports, accurately spaced around rotor and stator; with thin, smooth blades; and with individually balanced rotors to avoid muffling vibration.

Handsome streamlined housing protects and encloses all working parts, and lends massive appearance to this big siren. Federal makes many types of sirens, at various prices. Choice of coaster or regular models; flashing or motor-driven oscillating lights; various mountings. Federal features assure greatest possible safety, dependability; longest trouble-free operation. Write for details and prices today—get the booklet at right.

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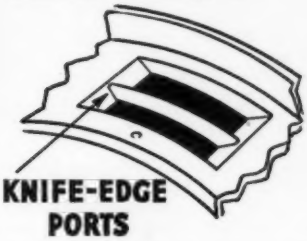
Cast aluminum or die-cast zinc alloy rotors, accurately machined, individually balanced. Thin, smooth blades handle large air volume with minimum current consumption.



KNIFE-EDGE PORTS

Square knife-edge ports assure even cut-off and true-pitched penetrating roar. Ports are spaced at exact intervals around rotor and stator, and balanced with motor speed for correct deep pitch throughout entire tone range.

Heavy duty long-life motors; ball bearings. Vehicle models 6 or 12 volts DC; others from 6 to 250 volts DC or 25 or 60 cycle AC.

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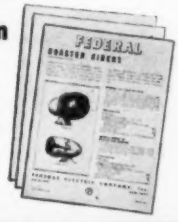
Details, illustrations, and prices on this and other types of Federal Sirens. Write today.



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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

How to Hold a "Wartime Convention"

HERE'S our recipe for holding a wartime hot weather conference, without fuss or worry over transportation and hotel accommodations, standing in line for "point"-less food and returning home pop-eyed with lassitude and dyspepsia.

● First, get your self into those old, comfortable clothes and slippers—or out of 'em, depending upon the thermometer. Fire up the old pipe. Pull up that pet chair. Turn on the fan. Hang the "DO NOT DISTURB" sign outside the door.

● Then take this "Conference-in-Print" issue of FIRE ENGINEERING in hand; sink back in your chair; cock up your feet—and "open your convention."

● If it's news of the fire service you crave, here it is; everything about persons, plans, programs and products—the low-down on the higher-ups, including up-to-the-minute accounts of fires that are making current history.

● If it's enlightenment, education, instruction, you seek, here are the "brain-children" of leaders in the fire service, with papers that would compliment *any* convention platform.

● If it's the latest data about products—apparatus and equipment—the "tools of the trade," you want, here is a veritable "exposition-in-print" such as no other fire service journal, and few "national conventions" can offer you.

● This, good reader, is *our* recipe for holding today's "war time conference" in the comfort and solitude of your own bailiwick. Try it!

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U. S. and Latin America, $2.50 a year; Canada, $3; Foreign, $3.50; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1945, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAUBIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

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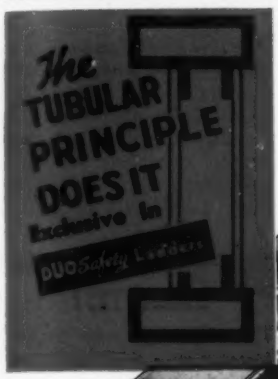

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MAXIMUM CLIMBING SPACE TO THE VERY TOP RUNG!

Duo-Safety's ALL-ALUMINUM ladders are back again! Here's that unique, space-saving, overlapping Series 525A construction (see cut). It gives maximum climbing space to the very top rung . . . reduces space required for banking, which makes the use of shorter wheelbases on service trucks. It does these things without sacrificing strength or light weight. Duo-Safety's exclusive TUBULAR PRINCIPLE does it! This rectangular extruded Duralumin rail, together with other structural refinements, gives the Fire Chief everything he's looking for, and makes Duo-Safety ALL-ALUMINUM a great Ladder hit!

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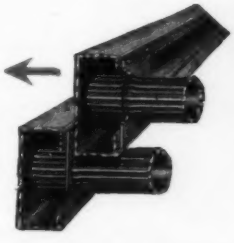

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"Use a Good Ladder or Stay on the Ground"

A LITTLE WATER GOES A LONG WAY

ONLY 125 GALLONS OF WATER USED

This tinder dry house was soaked with gasoline and oil before it was set on fire. Two firemen moved in with two FMC Fog Fire Guns at 30 gallons per minute. The flames were extinguished in two minutes. Total water used — only 125 gallons.

OUT—IN LESS THAN 5 MINUTES!

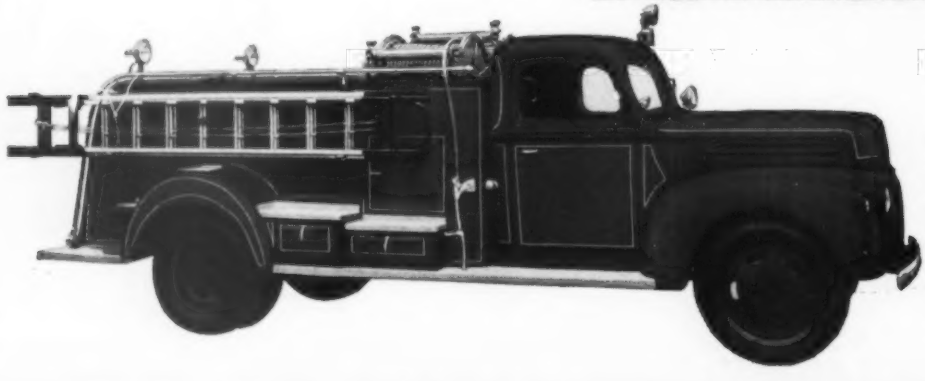
This old garage, with car inside, was saturated with inflammable liquids. One fireman knocked down the fire, using one FMC Fog Fire Gun at 30 gallons per minute. Total water used—less than 150 gallons.

YOU GET ACTION—*fast*—with FMC High-Pressure Fog. And you use a *minimum* amount of water!

Here's why! The high pressure provides a combination of high velocity and finely-atomized water—just what is needed to *blast, cool* and *smother* flame. One gallon of this steam-like water fog, properly used, has many times the fire quenching possibilities of low-pressure water.

The reason? The fine fog particles absorb heat more rapidly than ordinary droplets of water, and the steam —created by the fog—soon smothers the flames.

Due to its fineness, speed and heat-absorbing properties, the high-pressure fog is completely used up. There is *little* or *no water damage.*



STANDARD FMC FOG FIRE FIGHTER

A self-contained fire fighting unit. Carries its own water supply and complete fire fighting equipment. Provides two guns of 30 gallons each at over 600 lbs. nozzle pressure. Quickest possible action on arrival.

BUILDERS OF BEAN HIGH-PRESSURE

WITH FMC HIGH-PRESSURE FOG!

Note These Features:

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2. Adjusting Barrel.
3. Trigger Grip.
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The FMC Fog Fire Gun—built and patented by Bean—is designed especially for high-pressure fog fire fighting. It cannot be used with a low-pressure system.

This gun breaks up the water into minute particles—which form a veritable *blanket of fog.*

The gun is capable of projecting every type of fog formation that may be needed for any type of fire. Everything from a wide fog pattern for close-up work to a long-reaching power stream. On arrival—the fireman has all that he needs to fight the fire.

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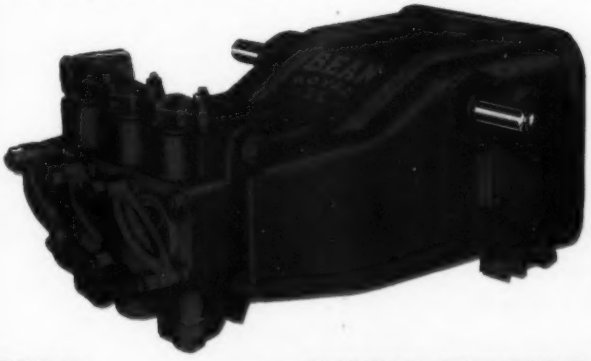
This pump packs the needed punch to produce and maintain *800 lbs. pump pressure*—over *600 lbs. nozzle pressure.* No need to speed up the pump to get the necessary pressure! It does its work easily — without overworking.



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GET THE FACTS. *You owe it to yourself to find out all about this new and revolutionary fire fighting technique. It has proved its worth at thousands of town, rural and airport fires.*

YOU GET ACTION—FAST!

This building is typical of the type of structures to be found in rural communities. Many are located far from water supplies.

This particular house (28 x 32) was entirely on fire on arrival.

The fire, which started all over the first floor, spread rapidly to the upper floors.

Two firemen with two FMC guns at 30 gallons per minute knocked down this fire.

The flames were extinguished quickly with a water consumption of about 350 gallons.

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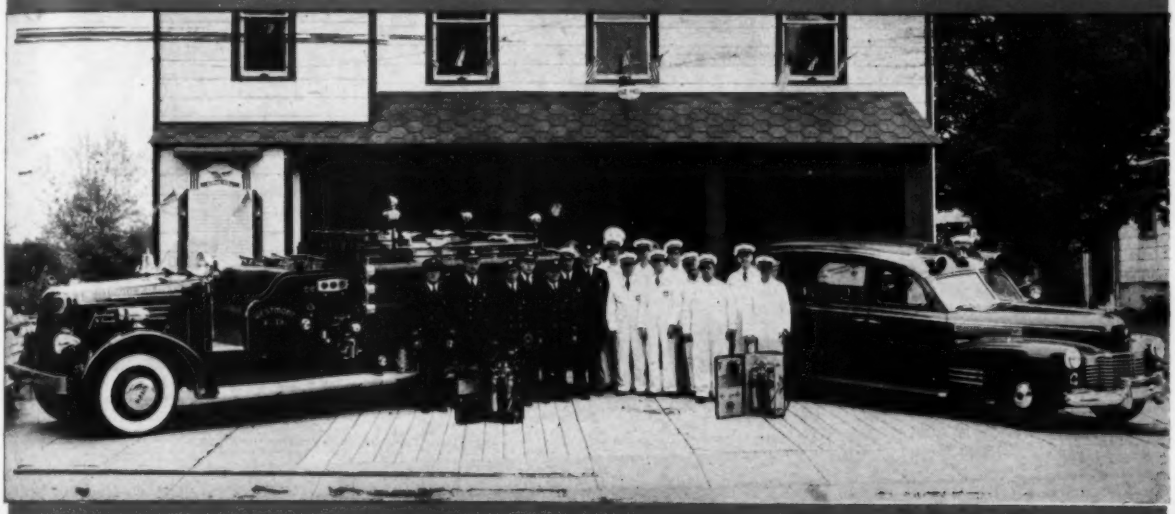

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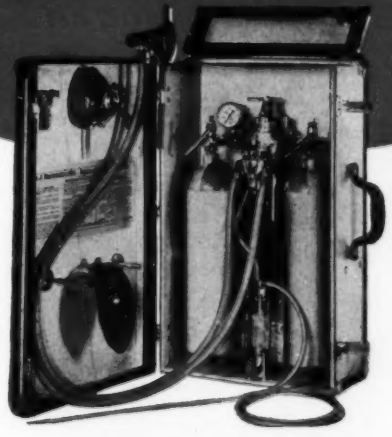

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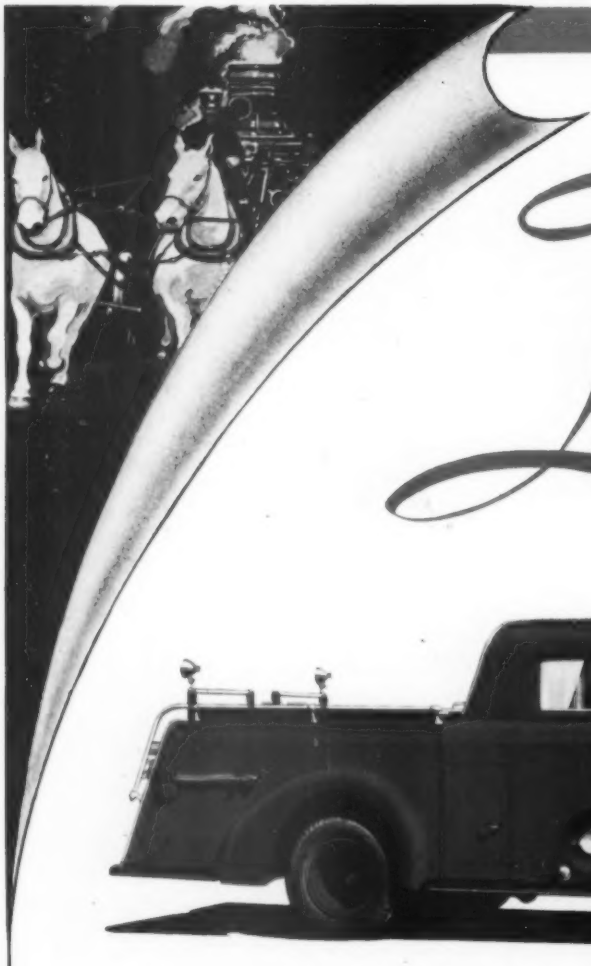
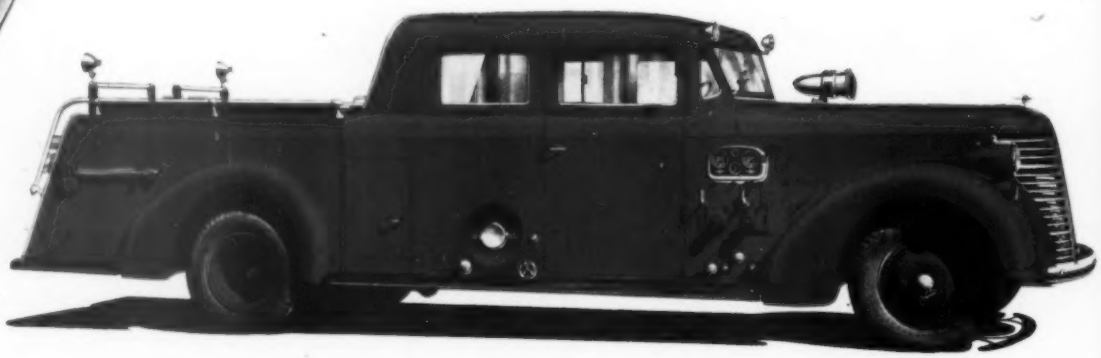


Leadership IN FIRE PROTECTION



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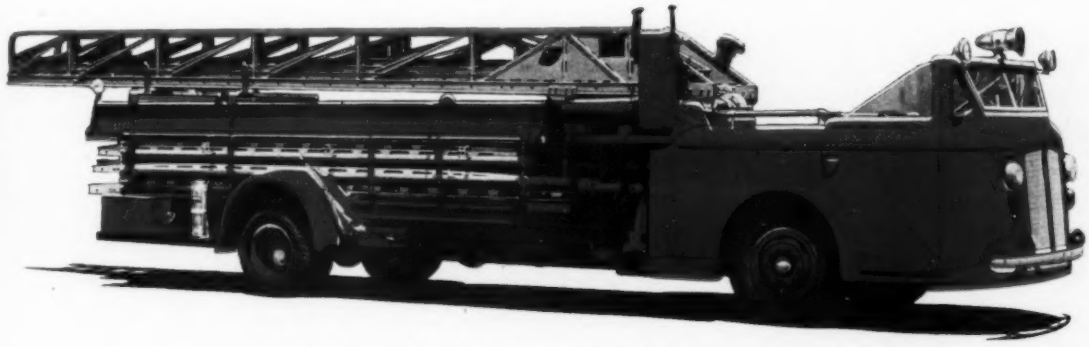

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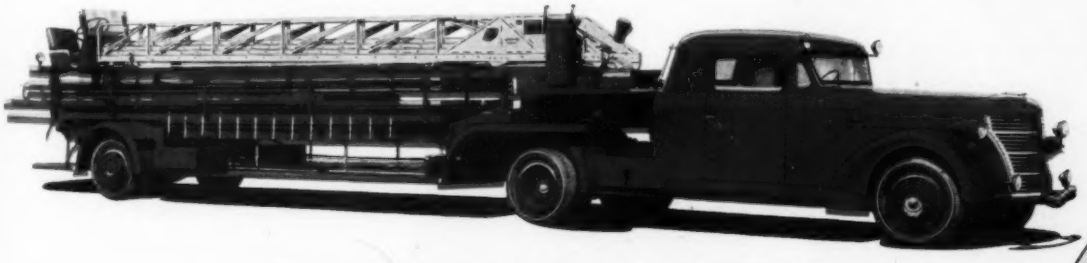

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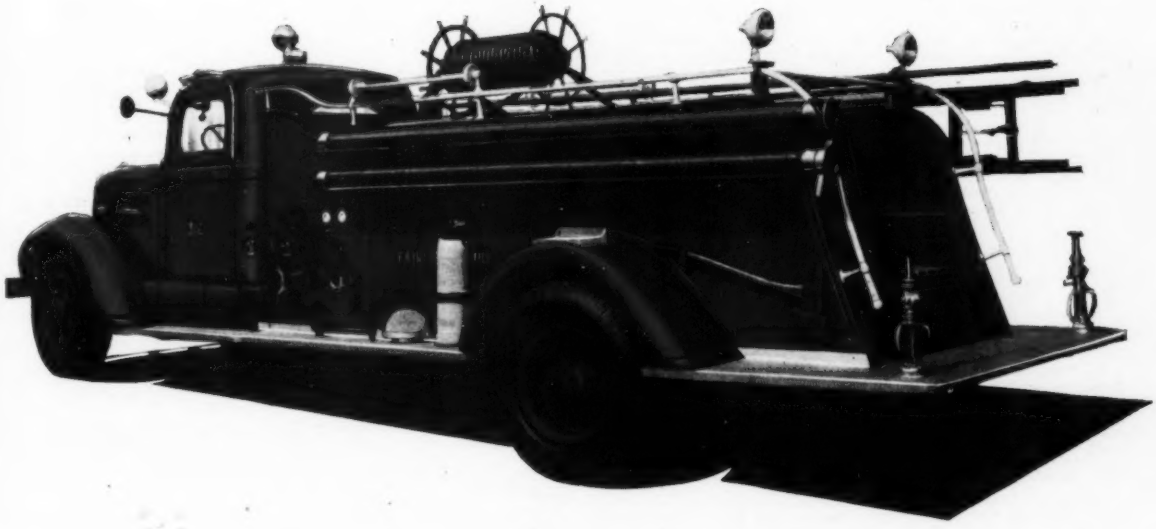

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Style 426 (illustrated above) is equipped with ladder hook.

Style 427—without ladder hook.

Also furnished in Styles 424 and 425, with and without ladder hook, in assemblies with Style 541 Plain Beaded Nozzle Tip.

AKRON BRASS MFG. COMPANY, INC. • WOOSTER, OHIO

AKRON BRASS

FIRE FIGHTING EQUIPMENT

SAN ANTONIO is sold on MACK!

● From the progressive Fire Department of San Antonio, Texas, comes one more proof that you can't beat a Mack for performance and economy.

San Antonio has decided to standardize as far as possible with Mack equipment. The reasons? Listen to Fire and Police Commissioner P. L. Anderson:

"We have given much attention to our upkeep costs, as well as to the interchange of spare parts. *Our conclusions pointed to your equipment*, and the result is we are able to carry a much smaller spare-parts stock, all of which can be interchanged from one apparatus to another, whereby we are enabled to keep the maximum strength of the department ready to go at all times." Isn't there an idea here for *your* department?

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

JOIN THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

- *to help make your community "fire-protection conscious"*
- *for helpful exchange of new ideas*
- *for technical advice and information*
- *for free educational material*

For application blank, write to: Fred Shepperd, Engineer-Manager, International Association of Fire Chiefs, 24 West 40th Street, New York 18, N. Y.

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FIRE APPARATUS

Chief C. A. Hart of San Antonio stands beside "General Donovan," a 1000-gallon Mack pumper. The San Antonio Fire Department names its apparatus for leading generals of this war. "What could be more fitting," says Commissioner Anderson, "than to put the names of the country's finest men on the finest equipment built!"

MACK MANUFACTURING CORPORATION
FIRE ENGINE DIVISION • EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

HAHN

Dependable Fire Apparatus Since 1907

What are YOUR Postwar Apparatus Requirements?

Do you want to incorporate something of your own ideas — developed from your own experience and needs? We are in an ideal position — now — to discuss these ideas with you and give you the benefit of our 38 years' experience in building dependable, efficient fire apparatus.

IMPORTANT: It takes time to build good apparatus. Restrictions are being lifted, but to avoid further delay better let us know your requirements as soon as possible.

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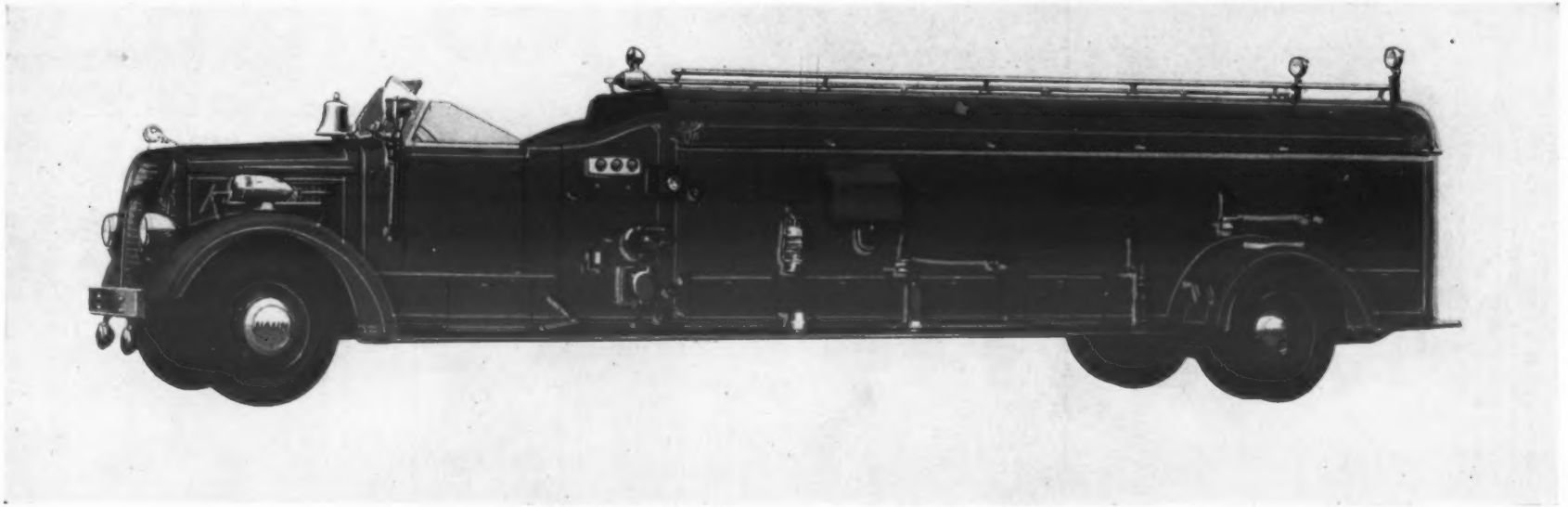

It will help you if you will mention FIRE ENGINEERING *when writing advertisers*

Chief POWHATAN

"SACHEM"—A tribal leader—and our "Sachem" leader line shut-off nozzle is truly a leader. It's the one shut-off nozzle you can order any time and rest assured you are getting the best nozzle you can buy.

For 53 years we have made brass goods of every description for fire departments in all parts of the country. Hundreds of fire chiefs can attest to the fact that our brass goods "stand the gaff" exceedingly well. Restrictions are being lifted and we urge you to let us have your requirements now, to insure your getting whatever you need, without further delay.

"SENSIBLE LUG" COUPLINGS

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
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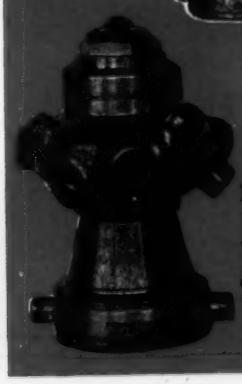
PRESENTS
to the Fire Field
SACHEM
LEADER LINE
SHUT OFF NOZZLE
Truly a **LEADER**

Improved Dewey Nozzle Expander, comes 2½ inch only. A Practical precision built tool that will last a lifetime.

Perfect Combination Play Pipe with Leader Line Tip. Comes in 2½ inch size. Built to stand the gaff.



Brennan Caller Nozzle comes in 2½ inch only. Ball bearing movement. A rugged, perfectly balanced nozzle.

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FOR the past year we've been telling you—in these pages—that you can depend on WATEROUS Fire Pumps. For fifty-nine years we've been steadily improving these pumps. For seasoned opinions—

ASK THE CHIEF—who uses WATEROUS Pumps—he knows they deliver maximum pressure and volume for long sustained periods—and keep it up year after year. He's interested in results—and you can depend on a WATEROUS for that!

ASK THE SERVICE MAN—the man who knows what's inside. He knows WATEROUS pumps are quick to service, easy to adjust and that he doesn't see them often or work on them long — and you can depend on a WATEROUS for that!

ASK THE ENGINEER—the designer of the apparatus. He knows a pumper is no better than the pump

SINCE Waterous Dependable 188

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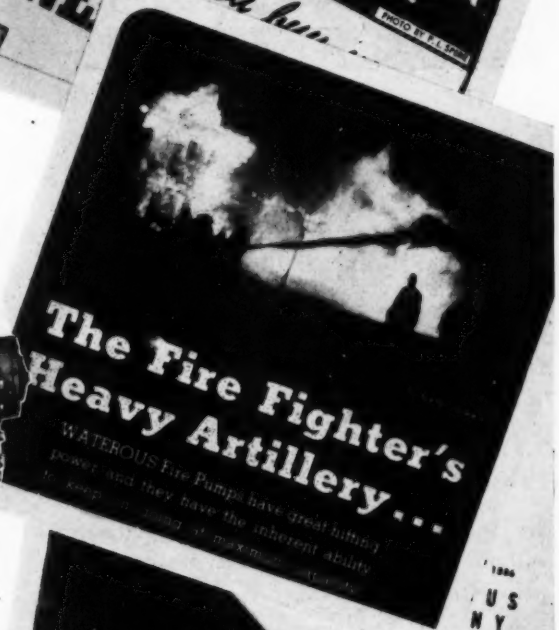

U COMPANY
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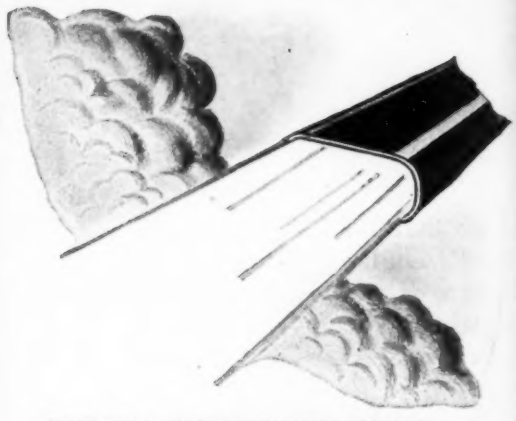
ers of *ATEROUS Fire Hydrants*

Announcing TRIGGER-FINGER Control for 10, 15, and 20-lb. fire-fighters

AT THE PULL OF A SINGLE FINGER... the new valve on these larger sizes of Kidde portable extinguishers opens with the same ease that has long been a popular feature of the 2- and 4-pound sizes.



THE FULL FIRE-FIGHTING FORCE... of the carbon dioxide discharge goes into action at once—no half-way measures with this new valve. When trigger is released, shut-off is complete and instantaneous.

And here are the PLUS features of this Revolutionary Development

1. Lock-open control is simple and sure. A slight forward movement of the trigger finger latches trigger open—no danger of fouling.

2. No replacement parts are needed for recharging.

3. Hydrostatic testing can be carried out without devalving. No devalving for repairs either.

4. Recoil outlet is of improved design.

5. Balanced handle design and low center of gravity make it easier to carry these bigger sizes of extinguishers.

6. Intermittent or continuous control is provided for.

7. The locking pin *cannot jam.* It seats in blind holes—there are no projecting ends to get bent over.

8. Streamlined design improves appearance.

9. Seal wire is fully visible for quick inspection.

10. Valve design is simple, fool-proof. The natural way's the right way to operate it—even a novice can't make a mistake!

10-, 15- and 20-pound extinguishers equipped with this new valve will be ready for delivery October 1. Place your order now.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Walter Kidde & Company, Inc. • 140 Cedar Street • New York 6, N. Y.

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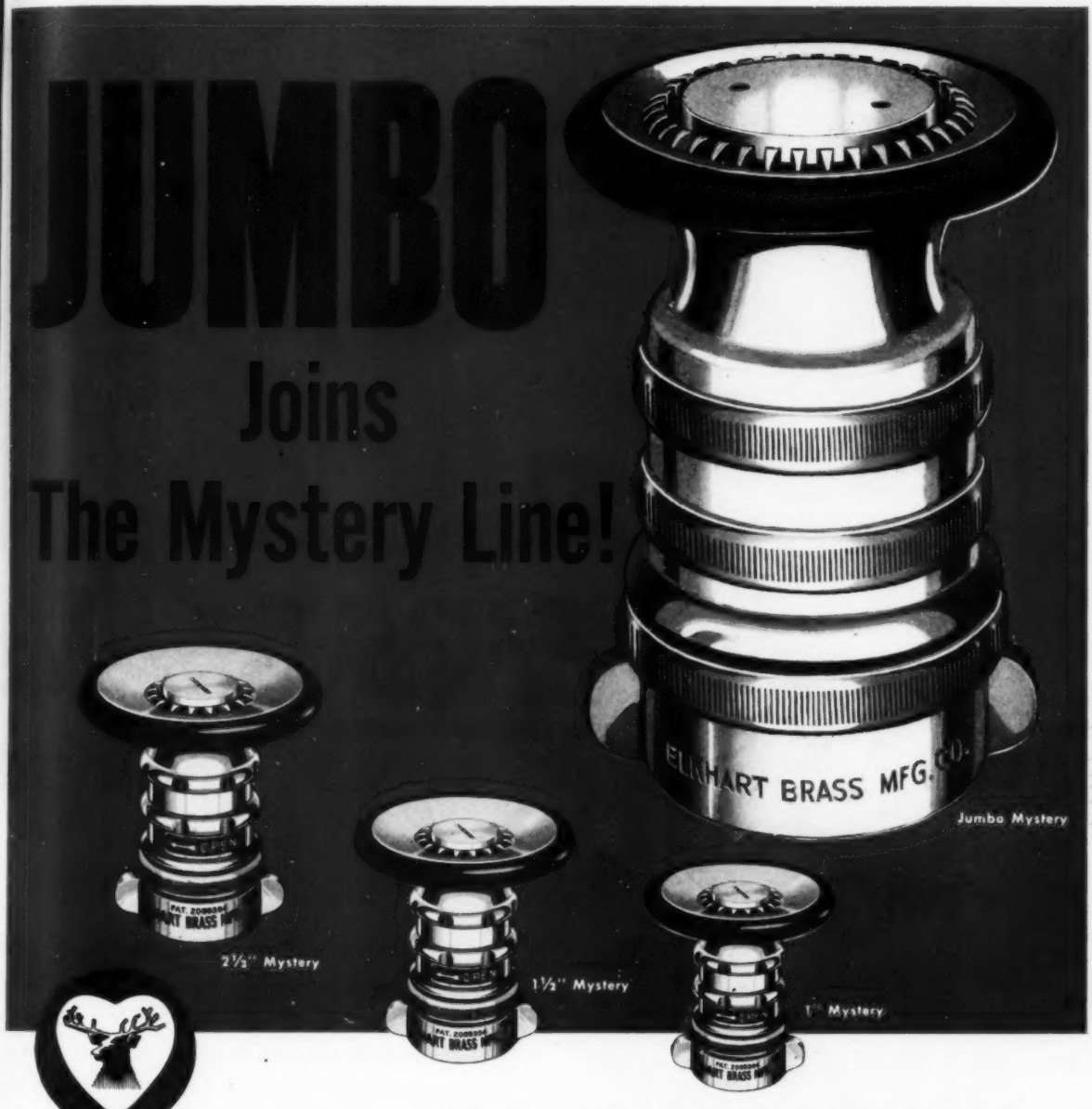
JUMBO Joins The Mystery Line!



A fog nozzle with a capacity of 750 gallons per minute! That's Elkhart's JUMBO, the latest addition to our famous line of Mystery nozzles.

The JUMBO's amazing success when used in connection with deluge nozzle (or short adapter with handles directly on 2-1/2″ hose) adds new power to Elkhart's line of Mystery fog nozzles. Like all Mystery nozzles, the JUMBO features a series of streamlined teeth which divert the direction of part of the nozzle stream to create a fog cone that's *entirely filled.*

This outstanding fog nozzle delivers a *perfect* straight stream — within 5% of the stream obtained with an open tip deluge nozzle. It operates from complete shut-off to straight stream to any degree of conical fog. Its huge output provides an enormous blanket of solid fog.

ELKHART BRASS MFG. CO., INC.

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Illustrated is quadruple ladder truck recen
delivered to Dumont, New Jersey. Our 26 ye
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stands behind a complete line of triple com
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Let our engineers help your community to s
cure an exact fit for its fire protection nee

WARD LAFRANCE TRUCK DIVISION • GREA AME

New York Factory Branch, 139th Stre & Br

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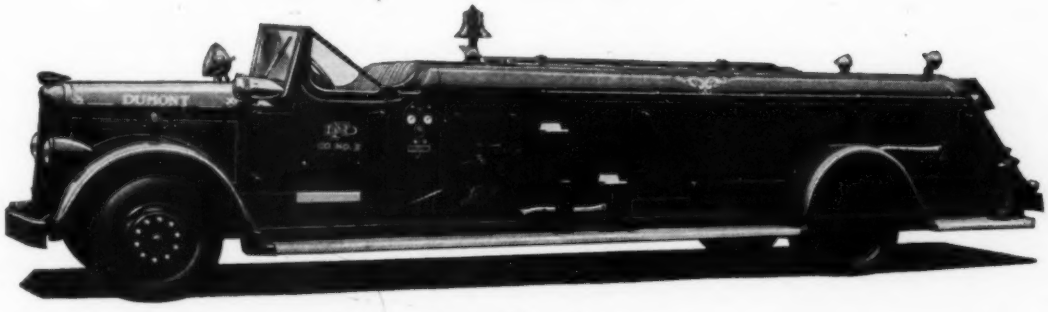
AFRANCE.

hFire-Fighting Field

QUICK FACTS

LENGTH—31 ft. 3 in. (no ladder overhang)
WEIGHT—15,340 lbs.
WHEELBASE—242⅝ in.
ENGINE—6 cyl. Ward LaFrance, 390# ft. Torque
PUMP—500 G.P.M., 2 stage Centrifugal
BOOSTER TANK—150 gals.
HOSE REEL (Rear)—Capacity 250 ft. ¾ in. hose
or 150 ft. 1 in. hose



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& Bruckner Blvd., New York City

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● Three years of painstaking development...! months of practical service testing under actual fire-fighting and breathing hazards...! a wealth of experimentation, experience, advice and guidance by the fire department of one of the largest cities in the United States...! brings Scott to the doorstep of an important announcement. Before the year is out we will introduce to the fire-fighting and safety field a new piece of equipment—one which we have foretold since October 1944. With its announcement a new era in protection and increased safety will open. Born in the battleskies where dependable oxygen equipment means life itself, this Scott-perfected innovation will soon be serving the fire departments and industry of the nation—Look for it! It will pay to wait before buying a substitute!

The Scott Portable Oxygen Unit, widely called a "walk around bottle" is a light-weight portable oxygen cylinder and precision regulator. In military service around the world.

SCOTT AVIATION CORPORATION
LANCASTER, NEW YORK, U. S. A.

450 TIMES ITS STORED VOLUME *in 25 seconds*

ALFITE

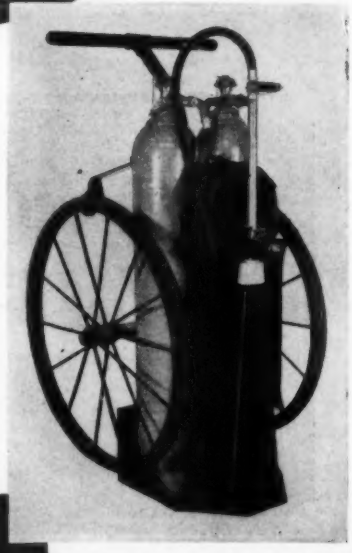
SPEEDEX FIRE EXTINGUISHERS SPOUT QUICK DEATH TO FIRE!

It puts out fires in a hurry!

If required, the entire contents expanding to 450 times stored volume, can be discharged within 25 seconds. You'll like this handy, quick-acting Speedex, its ease of operation, its fast discharge of a lot or a little of carbon dioxide gas as needed.

You'll like having nothing to clean up. The gas dissipates without a trace—and you'll like its convenient size, its good looks too, it's really smart in appearance.

Write for illustrated literature.



Speedex is available in 3 sizes, 4, 10, and 15 lb. capacities. Alfite Wheeled Engines also available in 50, 75 and 100 lb. sizes.

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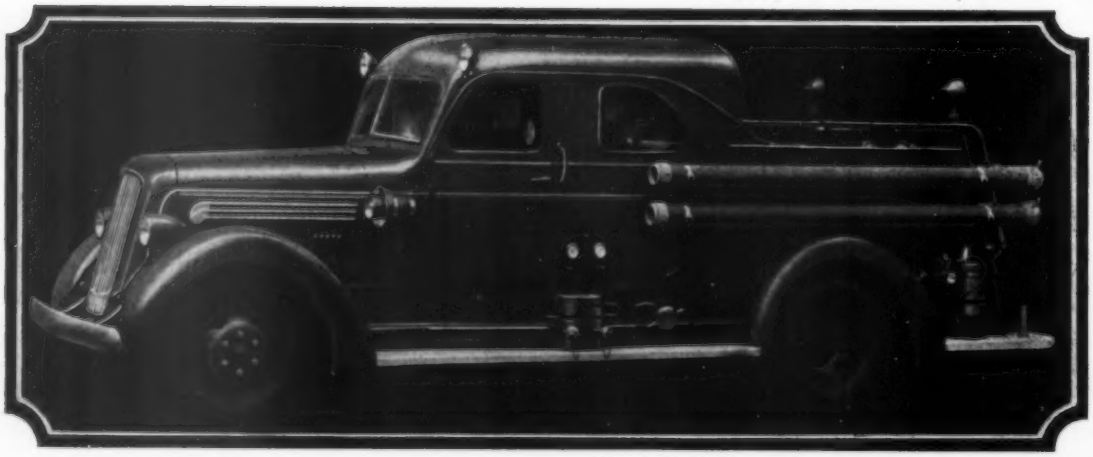
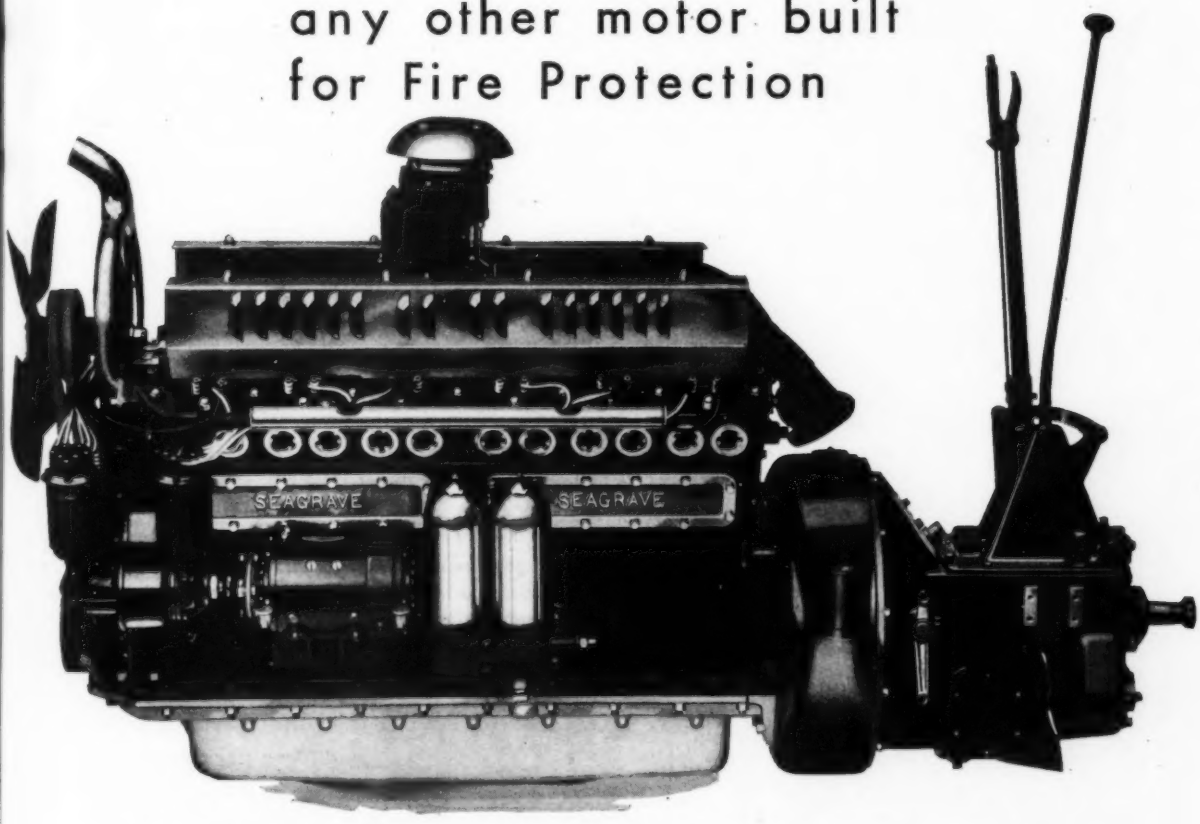
SEAGRAVE V-12



THE GREATEST NAME IN F

OUT-PERFORMS OUT-CLASSES

any other motor built for Fire Protection



This precision built motor is designed for fire protection and for no other purpose. Constructed by Seagrave especially for use in Seagrave Fire Apparatus.

The Seagrave V-12 is compact and rigid . . . shorter than most 6 cylinder motors of similar power . . . provides greater horsepower with less piston displacement.

If you want Fire Apparatus with a smooth, stream-like flow of abundant power . . . longer life and trouble-free performance then specify Seagrave.

THE SEAGRAVE CORPORATION, Columbus, Ohio
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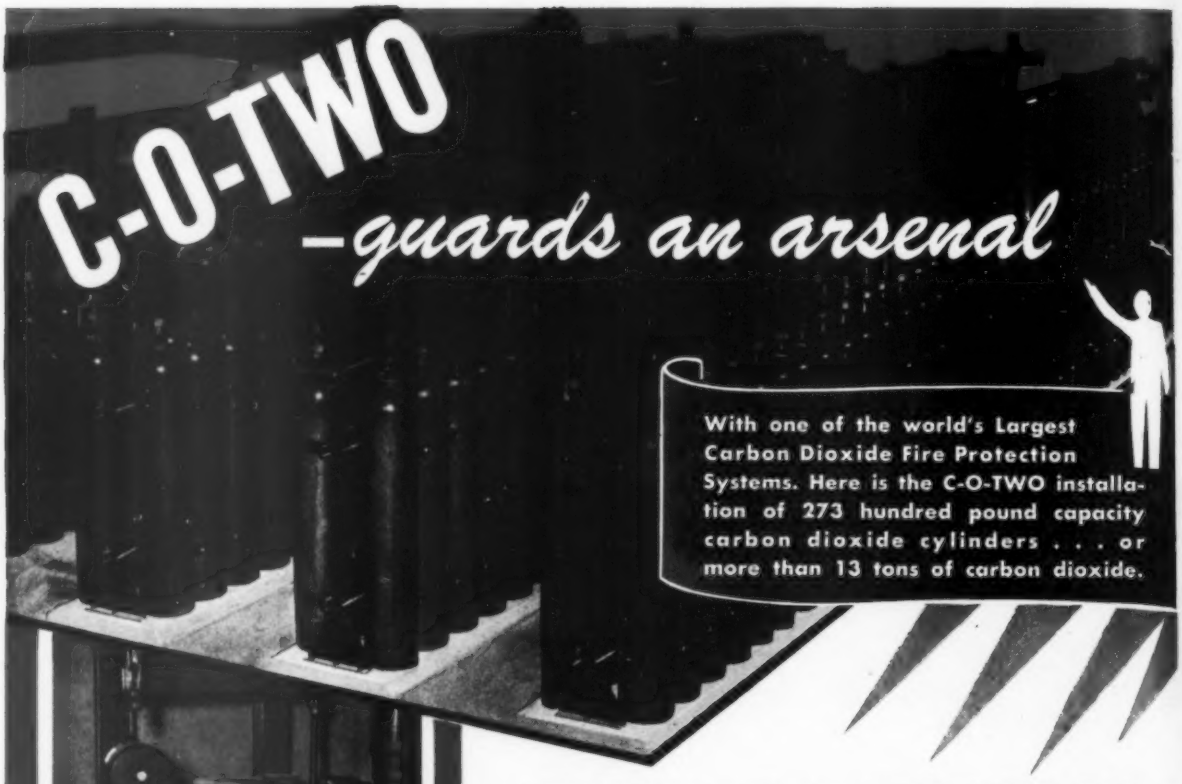
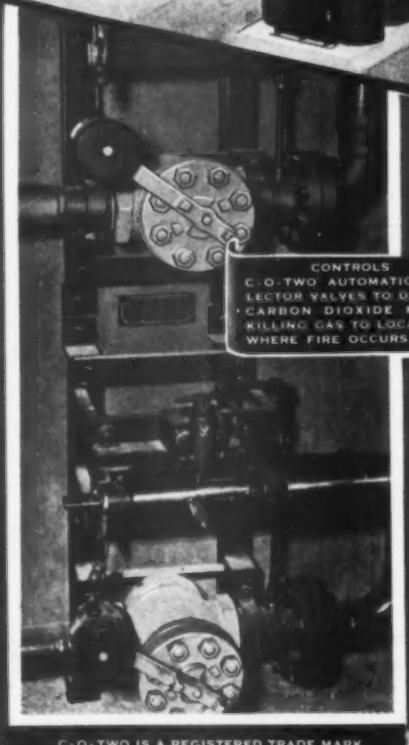
FIRE APPARATUS

C-O-TWO —guards an arsenal



With one of the world's Largest Carbon Dioxide Fire Protection Systems. Here is the C-O-TWO installation of 273 hundred pound capacity carbon dioxide cylinders . . . or more than 13 tons of carbon dioxide.



CONTROLS C-O-TWO AUTOMATIC SELECTOR VALVES TO DIRECT CARBON DIOXIDE FIRE-KILLING GAS TO LOCATION WHERE FIRE OCCURS.

C-O-TWO IS A REGISTERED TRADE MARK AND CORPORATE NAME OF THIS COMPANY. C-O-TWO SMOKE DETECTING, FIRE EXTINGUISHING SYSTEMS AND PORTABLES ARE FULLY APPROVED FOR MARINE USE AND LISTED BY UNDERWRITERS' LABORATORIES AND FACTORY MUTUALS.

At one of the largest arsenals where thousands of incendiary bombs are stored, packed and loaded for the allied forces on all fighting fronts, every moment presents untold dangers—the greatest of them, fire—fire among tons of incendiary bombs! To guard against all possibility of such a catastrophe, reactor room, filling room and storage space of the arsenal are protected by a C-O-TWO Fire Extinguishing System; one of the largest carbon dioxide fire protection installations in the world.

IT'S SAFER because IT'S FASTER

At a second's notice, 273 C-O-TWO cylinders can automatically flood the protected hazards with 13 tons of fire-killing carbon dioxide gas. Pressure operated warning siren sounds, and explosion-proof switches stop all electrically operated equipment in the fire area. Doors and all ventilating ducts automatically close after thirty seconds to permit evacuation by employees . . . then the entire space is totally "flooded" with dry carbon dioxide gas, and in a few seconds the fire is extinguished, as the oxygen content of the air is diluted to a point where fire cannot exist.

C-O-TWO carbon dioxide built-in systems, hose reel units, portables and smoke detecting devices are engineered to give industry maximum, modern fire protection. Carbon dioxide, the fastest, non-damaging fire extinguishing agent, kills a fire in seconds. It does not deteriorate nor freeze and requires minimum attention. The experience gained by C-O-TWO engineers in supplying fire protection for Army, Navy, Coast Guard, Air Forces and industry is yours to command. Write for information.

C-O-TWO Kills Fire . . . Saves Lives

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1 NEW JERSEY

C-O-TWO *Sales and Service in the Principal Cities of United States and Canada*

ARMY NAVY

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

"I'll take it over any other coupling, anytime"

KLEERLINE COUPLINGS

Here's why —it's the world's best coupling—it won't catch on stairs or ladders, no lugs to burr and wear holes in hose when stacked, as up-to-the-minute as your modern apparatus. The last word in coupling design, its the best money can buy. I'm specifying KLEERLINE on all new hose orders.

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EQUIPMENT COMPANY, INC.
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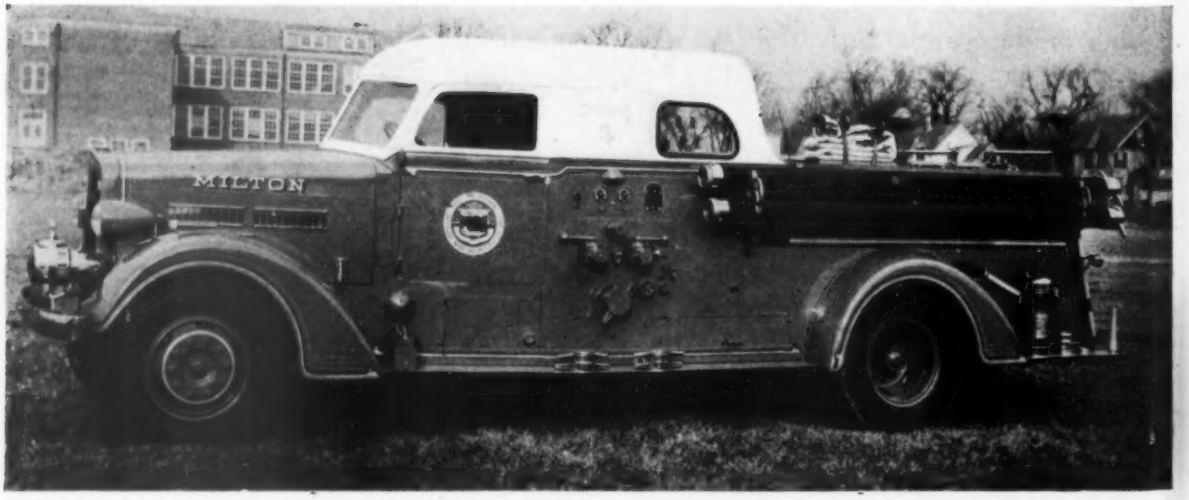
We are READY

MAXIM

THE FINEST APPARATUS MONEY CAN BUY

RESTRICTIONS on materials for municipal fire apparatus are being lifted. Finally you can look forward to getting the modern, efficient apparatus that you need so urgently. May we remind you that you should let us know your requirements as soon as possible to avoid any further delay.

MAXIM MOTOR COMPANY
MIDDLEBORO MASS.

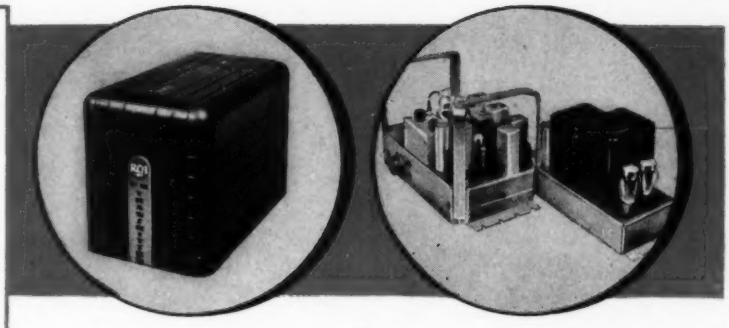


New RCA 26-42 MC (Mobile or Station) FM Transmitter Features

1. Superior audio quality sets new standard. Sounds better. Easier on the ear. Easier to get message.
2. Positive modulation threshold limiter. Adjusts automatically to input of low or loud voices. No "blasting."
3. Low spurious emission. Less extraneous noise interfering with other services. Fewer energy leaks to make trouble.
4. Improved phase modulator requires no tuning. No more bother with modulator.
5. Excellent stability over wide temperature range. Temperature change has minimum effect on operation of equipment.
6. Adjustable to exact, specified frequency. Easy, precise tuning in a hurry.
7. All tuning adjustments are from top of transmitter. Easily accessible. (Remember those times you have had to turn the chassis over?)
8. No high voltage exposed above chassis. All dangerous voltage out of reach. (Many times a slip of the hand might have given you a shock.)
9. Provision for two-frequency operation. Useful when you want to switch over from talking between car and station to talking between car and car (and in lots of other ways).
10. Single control cable—also accommodates receiver. One cable, instead of three or four, running from front of car to rear. Simplifies installation and maintenance.
11. Mobile cables equipped with separable connectors. Add flexibility in operating equipment. Equipment removable without using special tools. All cables plug in and lock.
12. Chassis readily detached from base. Easier to inspect and service.
13. Single-unit construction saves space.
14. Easy to install. Mounting hardware supplied. Comes complete, down to bolts and nuts.
15. Start-stop switch on chassis to facilitate adjustment. (Think how much better this is than having to go up front and press a button to turn on the transmitter.)

New FM 26-42 MC (Mobile or Station) FM Receiver Features

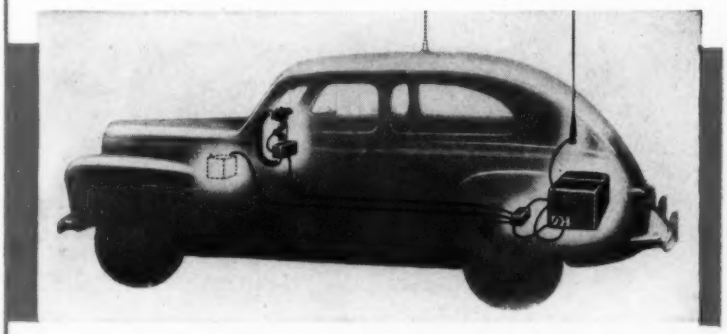
1. Superior adjacent-channel selectivity. You hear the station you want to hear.
2. Low spurious response. Won't pick up unwanted signals.
3. Excellent stability over wide temperature range. Variations in temperature have minimum effect on operation.
4. Single-unit construction. Fewer interconnecting cables. Easier to service.
5. Easy to install. Mounting hardware supplied. Comes complete, down to last nut and bolt.
6. Chassis readily detachable from base. Easy to remove for inspection and servicing.
7. Mobile cables fitted with separable connectors. Cables plug in and lock. Require no special tools. (Another important point—you can't plug in the wrong cable!)
8. Low battery drain. Less battery servicing.
9. Class B output tube saves power on standby. Output stage takes very little power except when signal is being received.
10. Provision for carrier-operated relay. Can be used to operate other circuits for auxiliary signalling—turn on light, ring bell, etc.—or operate retransmitting equipment.
11. Single crystal. Eliminates potential trouble with matching crystals.
12. Attractively styled. And we mean darned good-looking.



YES, IT'S TRUE!

RCA's New Line of Police and Fire Department Radio is Rolling Out of Production . . .

—and hundreds of inquiries are rolling in!



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For Complete Information, Specifications, Pictures, Diagrams—Use This Coupon

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RCA VICTOR DIVISION • CAMDEN, N. J.

In Canada, RCA VICTOR COMPANY LIMITED, Montreal

. . . for the FIRE SERVICE

Link FM Radio Communication Equipment serves fire departments, just as it does police departments and others in the Emergency Services. Long in use by many fire departments throughout the country, it is the logical choice for fire officials whose buying guide must be *proven performance.*

The many uses of radio in fire department work — the fact that the Fire Service can now be on an equal basis with other Emergency Services in the operation and use of radio communication — the new frequency set-up which gives the long desired "Green Light" — all make radio a MUST for every progressive department.

So get the facts NOW about what radio can do to modernize fire fighting; then get the equipment conceived, designed, built for this type of service — LINK PREFERRED FM RADIO COMMUNICATION EQUIPMENT.

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ENGINEER • MANUFACTURER

Fred M. Link

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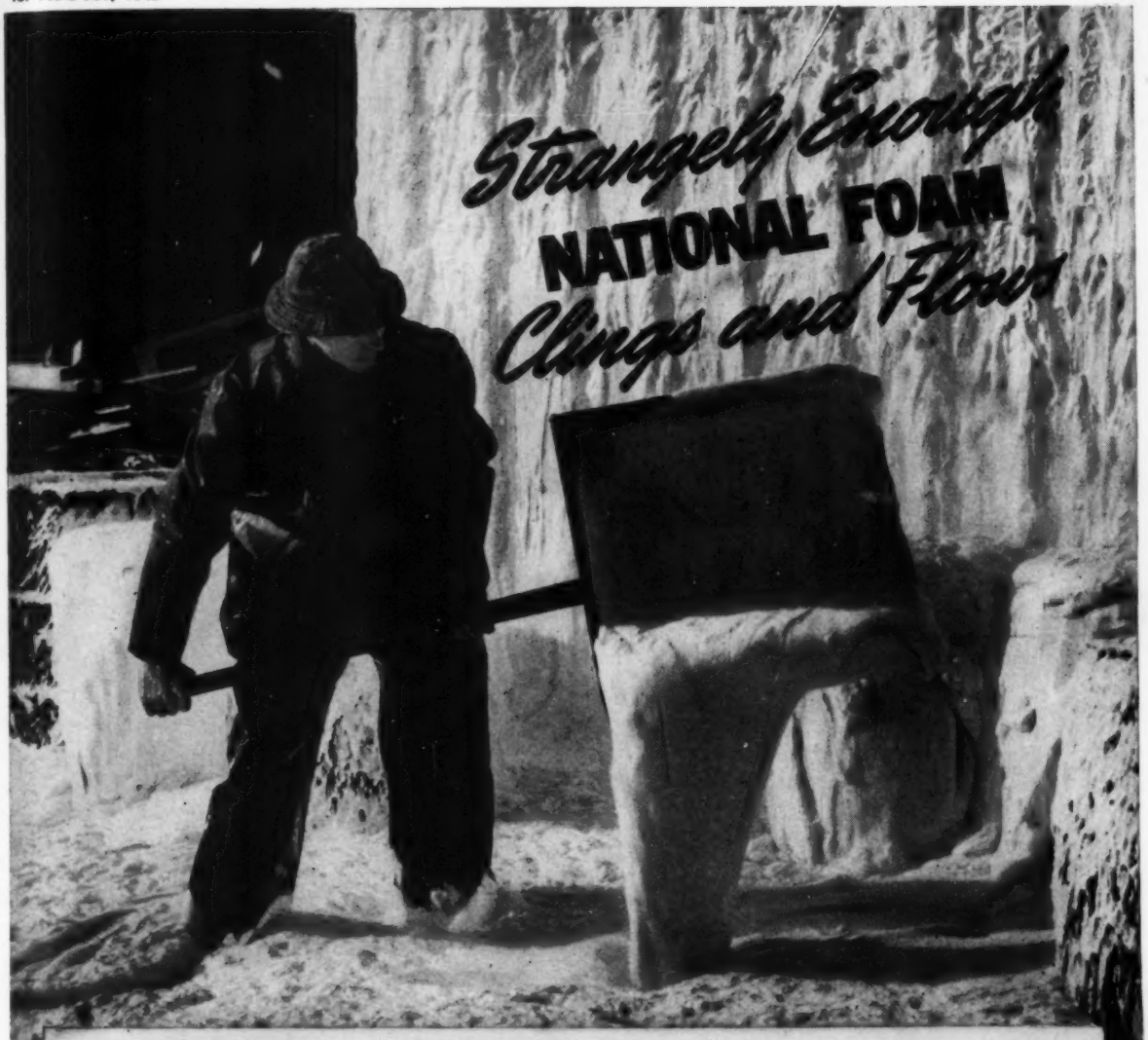
PREFERRED *FM* RADIO COMMUNICATION EQUIPMENT

MANUFACTURED UNDER LICENSE OF THE ARMSTRONG PHASE SHIFT MODULATION PATENTS



Seemingly impossible, NATIONAL FOAM flows freely as well as clinging fast. And since seeing is believing, note the man (above) shoveling the heavy, tough lather of Aer-O-Foam bubbles while the same fire extinguishing substance sticks close to the vertical surface behind him.

The "bean soup", as the U. S. Navy respectfully calls Aer-O-Foam, flows quickly and easily over any surface afire, literally smothering it. Walls either aflame or threatened by fire are as rapidly plastered with Aer-O-Foam which forms an airtight blanket snuffing out flames or insulating any surface against them.

Proved effective everywhere, this development of National Foam has fought alongside our fighting men all over the world (4,000,000 gallons having been supplied for the Navy alone). Aer-O-Foam is now available for protecting the home front.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of foam fire fighting requirements.

BACK THE ATTACK—BUY WAR BONDS

NATIONAL FOAM SYSTEM, INC.

SPECIALIZING IN FOAM FIRE PROTECTION

Packard Building. Philadelphia 2. Pa.

ELEVATED STREAMS FROM PIRSCH AERIALS ★ ARE EFFECTIVE ★

Fighting fire from above is sometimes the answer to your problem. Effective elevated fire streams will save time, property and sometimes lives in fighting hard-to-reach fires in elevators and other tall structures.

The Pirsch aluminum alloy aerial ladder powered by the Pirsch Hydro-Mechanical Hoist is ideally suited for elevated fire streams on account of its great strength, flexibility and maneuverability.

The Pirsch 75' Intermediate aerial ladder truck featured above delivered to City of Macon, Ga.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

ALERT TO ANY EMERGENCY

Bendix-Westinghouse congratulates that leadership of the nation which recognizes the pertinent fact that the world's most effective safety campaign begins right in City Hall and whose safety records with Bendix-Westinghouse Air Braked Units vindicate their excellent judgement ★ If you haven't investigated the "Quick Action" Air Brake developed expressly for Fire Department use, you have a very agreeable surprise in store ★ Consult your local Bendix-Westinghouse Distributor or write direct to the Bendix-Westinghouse Company, Elyria, Ohio for complete information, without obligation.

These World Famed Manufacturers of Fire Fighting Apparatus Recommend and Furnish Genuine Bendix-Westinghouse Air Brakes Upon Specification:

AMERICAN-LAFRANCE-FOAMITE CORPORATION
BUFFALO FIRE APPLIANCE CORPORATION
MACK MANUFACTURING CORPORATION
PETER PIRSCH & SONS COMPANY
THE SEAGRAVE CORPORATION
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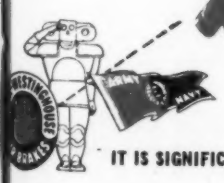

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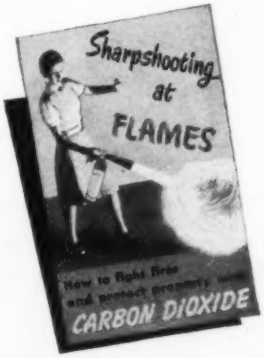

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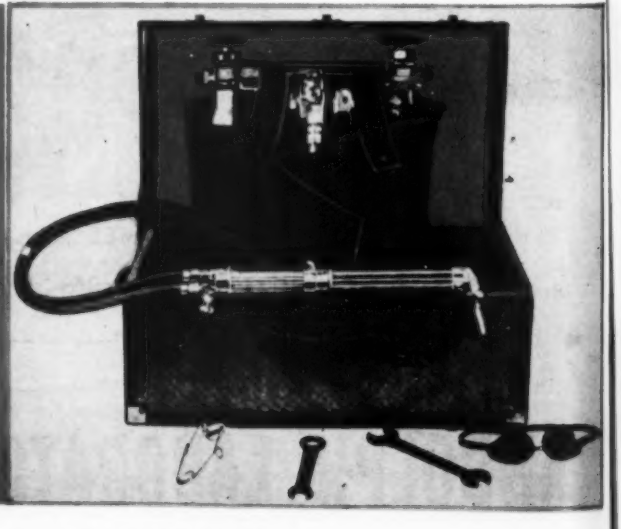

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Inadequate fire defense is indicated when a citizen must traverse a greater distance to send an alarm than is required by the recognized standard of box distribution.

AND any list of post war requirements should contain the item of additional alarm boxes, underlined in red. There is hardly a community in the country today that hasn't increased in population and building construction. These new developments and many old ones need the protection of alarm boxes. Now is the time to plan for these additional boxes, don't wait until victory is achieved.

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FIRE ENGINEERING

AUGUST, 1945 VOL. 98, NO. 8

With the Editor

Where Do We Go From Here?

The national Office of Civilian Defense has formally ceased to exist. Like the Arabs, it folded its tents and silently stole away. Its skeleton has been willed to a not-too-willing Department of Commerce, which may have a spacious closet for it.

In a way, it is regrettable that this agency, born of necessity in the frightening days of the war, and which accomplished so much good in spite of, rather than because of, its administration, should pass into oblivion unlamented and unsung, without the nation having at least a bird's eye recapitulation of its activities and accomplishments.

In retrospect, FIRE ENGINEERING has both commended and condemned the nation's civilian defense program under OCD. We criticized the bungling—not so much in the creation, as in the distribution, application and maintenance of its war emergency fire fighting equipment. We didn't like to see the manufacturers of standard fire apparatus and appliances and equipment have so little part in the picture. Thoughts of single jacket hose, and other essentials made out of "non-critical" materials, to us, were like a red flag to a bull. We railed at efforts to set up "emergency" fire fighting forces independent of and separate from the regular municipal fire service. We fired many a word salvo at master-minds who, never having been a part of the recognized municipal fire forces, nevertheless took it upon themselves to set up training and instruction courses for not only auxiliary emergency firemen but for the "regulars." And we exploded—verbally—at efforts of other "do-gooders" to militarize or "nationalize" the country's fire service, whatever the pretense.

On the other hand, we realize that all these schemes and stratagems were to be expected where civilian programs were administered by persons strange in the ways of municipal government administration. We give the fire service credit for making the best of it under the conditions.

On the asset side of the ledger, too, we credit the fire service with much of the success achieved in instilling at least the rudiments of fire prevention and protection into the minds of the millions of civilian defense enrollees. And we have nothing but orchids for those hundreds of thousands of auxiliary emergency firemen of all ages, creeds and colors who served their country and their communities ably and well. May their reward be something more than the tin helmet, and "certificate of merit" they hope to get—some day.

But there is one phase of civilian protection under OCD which grows more of a liability every day. We refer to the millions of dollars' worth of its war emergency fire fighting equipment now gathering dust and rust in so many communities.

Long before the demise of civilian defense was foretold, experienced fire officials had registered their skepticism and suspicion of OCD emergency equipment for municipal peacetime use. Surveys made and published by the International Association of Fire Chiefs and this journal showed that a vast majority of fire chiefs placed no reliance upon it and wanted to dispose of their holdings.

The rather abrupt end of OCD and removal of all warehouses and field offices—regional and state—before that agency had made proper provision for final disposal of the fire fighting pumps and other equipment, left many communities in a state of confusion on the point. At this writing the situation is worse. Although the Department of Commerce is reported to be charged with the job of handling OCD post-mortem details, inquiries from the editors of FIRE ENGINEERING, the I. A. F. C. and its Divisions, as well as from many individual fire chiefs and OCD property officers elicit no reply.

Some communities are reported to have "released" their OCD pumps and appliances to suburban or rural communities; some to private in-

dustry; some to institutions—any place to get rid of it. Others have been holding the material for shipment for months. Still others have made no attempts to pack it, leaving it a prey to rust and dust and the weather. Others have given away their pump-can extinguishers, helmets, and so on.

What will be the outcome? It is anyone's guess right now. Recommendations for what is believed to be the most intelligent dispersal or disposal of the equipment has been made to Congress by a committee representing the National Board of Fire Underwriters, International Association of Fire Chiefs, International Fire Fighters Association and the National Fire Protection Association, Mr. George Booth, Chairman. Other recommendations have been made by the National Fire Waste Council of the United States Chamber of Commerce. The American Water Works Association has invited the attention of its members to the possibility of their acquiring OCD pumps "if they want them in their systems."

Meanwhile, a number of bills have been drafted by members of the House and the Senate bearing upon the problem. One Bill now before the Senate will permit the sale of all remaining OCD fire fighting equipment as "surplus property to the highest bidder, without restriction."

Almost daily, letters are reaching this journal from fire chiefs complaining that their efforts to acquire standard fire apparatus and equipment are being sidetracked or indefinitely postponed, because of this situation. OCD property officers —many of them fire chiefs—under bond, and accountable for the government property allocated to their communities, are frankly worried. They ask "What is the limit of their legal responsibility for all or part of their allocations? What about missing or destroyed equipment or parts? How can they shift responsibility and get rid of OCD equipment?" These and related questions indicate the concern of the fire service over a problem for which there is no apparent early and satisfactory solution.

Fire Service Research

Many present-day fire fighters will remember the old-timers who scoffed at "new fangled" ideas. The horse and the old coal-fired steamer were good enough for them. They went to their final rest refusing to concede any merit in the motor car, the automatic sprinkler and chemical extinguishing agents, and so on. Even today, there may be some who won't admit the efficacy of water-fog, foam, modern ladders, radio communications, and other developments in the fire service.

Surely study of the last two decades of progress, and particularly the last four years, should dispel the belief that there is nothing new under the sun or that, if it is new, it is no good.

The war has already put its imprint on the fire service. And the war's impact is going to be felt for many years to come. One of its most important lessons taught us is the need for continued and exhaustive research in all matters pertaining to fire prevention and fire suppression.

It would indeed be a pity to see the time, effort and money spent by the Armed Forces to develop better fire fighting equipment and techniques disregarded or not capitalized in the future. It would be a crime if the fire service (including that of the Armed Forces) were to call it a day and write "finis" to the development and scientific research it has seen done in the last few years. Yet that is quite likely to happen, unless the fire service organizes for the task.

Recollect that the fire service has never had any organized facilities for comprehensive group research, as have the insurance underwriters and the government. What has been accomplished has been the work of individuals in the service, or by fire departments, or the apparatus and equipment manufacturers. There has never been an intelligent, forethoughtful research program within the fire service per se.

Perhaps the time was not ripe for it. But nobody can deny that, in view of what the war has taught us and what may be expected of future wars, it is time to organize on an intelligent basis for some systematic, progressive research in fire prevention, fire protection, fire training and all kindred fields of endeavor. The job of postwar research cannot be left alone to government, or underwriters, or the manufacturers. It calls for the "everlasting cooperation of every bloomin' soul."

Fred Sheppard

Bomber Hits Empire State Building; New York Gets Its Highest Fire

Four Alarm Assignment Subdues New York's Loftiest Blaze Following Fatal Bomber Crash

A STAFF REPORT

A DISASTER that has long been anticipated and feared occurred at 9:45 A. M. Saturday, July 28, when an Army B-25 Mitchell bomber, groping through thick fog, crashed into the Empire State Building at a point 915 feet above street level, leaving fourteen dead—three of them occupants of the plane, and twenty-six injured, four critically.

The eight ton, twin-engine plane, striking the north side of the 102-story, 1,250-foot structure, smashed through seven walls and partitions and then hurled parts of its wreckage out the south side, where one of the motors crashed atop a twelve story building across 33rd street. Other parts of the plane, together with pieces of the structure itself, were thrown in every direction, fragments being found half a mile distant. The plane, said to have been traveling faster than 300 miles per hour, struck with terrific force; its wings were sheared off but the motors and fusilage ripped a hole eighteen feet wide and twenty feet high in the outer wall of the seventy-eighth and seventy-ninth floors, on the 34th street side of the structure.

One motor, which tore clear through the seventy-eighth floor to fall on the twelve story office building at 10 West Thirty-third street, started a fire which demolished the penthouse of Henry Hering, noted sculptor, with resulting damage estimated at $75,000. The other motor and part of the landing gear crashed into one of the elevator shafts, where they fell to the sub-cellar, 1,000 feet below. A steel girder at the seventy-ninth floor was bent inward eighteen inches by the shock.

Cascading Gasoline Spreads Fire

Cascading torrents of flaming gasoline poured through the seventy-eighth and seventy-ninth floors, setting fire to everything that was combustible. Burning fuel ran down stair wells into hallways as far as the seventy-fifth floor, as well as down the face of the building. Choking fumes and smoke rose upward to the conservatory, 1,050 feet above the street. Roofs of adjacent buildings sprouted fire and smoke.

Just how much high test gasoline was in the plane's tanks at the time of the accident is unknown but it was sufficient to start fires which gave the four alarm assignment of New York's Fire Department a tough forty-minute battle. The normal gasoline capacity of the B-25 is said to be 1,500 gallons.

Death Toll Providentially Low

Because it was Saturday, there were few occupants in the building. The fog and bad visability had reduced the number of persons in the upper observatory at the 102nd floor level to three. They, with two guards who were stationed at that point, made their way to safety. About fifty persons were in the glass enclosed observatory at the eighty-sixth floor level. Immediately after the crash, flames shot up the elevator shafts, followed by a heavy cloud of smoke, while metal fragments of the plane landed on the open balcony outside. However, there was no panic at this point. The heat and smoke from the fire below made the observatory uncomfortable but the guards at this point broke open the glass doors letting in fresh air and, when it was found to be safe, the people used the stairs.

The War Relief Services of the National Catholic Welfare Conference—the largest sufferer in the disaster, fortunately had only about half of its normal staff of thirty persons at work at the time. It is believed that only five of those on the floor escaped death or serious injury.

W. Paul Deering, publicity director of the organization, either jumped or was blown from his seventy-ninth office to his death on a ledge on the seventy-second floor that caught his body. He was the only recognizable victim of the agency's staff members who were killed. The others were burned beyond recognition and were identified hours later only by means of dental charts and bits of jewelry.

One of the bodies was found in Mr. Deering's office; two others in a small glassed-in office where they had smashed window panes in a vain effort to gain air. On the north side of the office, nearest the point where the bomber crashed, it was indicated that the persons in that section were either killed outright by the explosion or so stunned that they never had a chance to escape the searing flames.

Also found on the seventy-ninth floor were the remains of the two crew members of the plane, Lieut. Col. William F. Smith, Jr., who was piloting the ship, and S/Sgt. Christopher Domitrovich. The body of the plane passenger, Aviation Machinist's Mate, Albert G. Perna, was reported found some time later at the bottom of one of the elevator shafts.

Included on the critical list was Betty Lou Oliver, girl elevator operator who, while in the car, dropped eighty stories, when parts of the plane severed cables. Her escape from immediate death is considered a miracle.

Reports from the building management were that there were between 1,000 and 1,500 persons in the structure at the time of the accident. Had it happened on a full business day there would have been 5,000 tenants and 5,000 to 10,000 transients in the structure at that hour.

All of the dead and most of the injured were found in the building. It was considered remarkable that in view of falling glass and fragments of the plane and building which showered

Wreckage on 78th Floor After Crash. Remains of Bomber Shown at Left

down, that injuries were not more numerous and more serious. Only a few persons on the street were hurt and these slightly, street and sidewalk traffic being light at that hour. In addition, the plane hit head on, most of its wreckage being confined within the building. Had it struck a glancing blow and disintegrated into Fifth avenue and Thirty-third and Thirty-fourth streets, casualties might have been greater.

Police quickly roped off the entire area, keeping the thousands of spectators at a safe distance from falling glass and debris. This action prevented further casualties and assisted the firemen in their rescue and fire-fighting operations.

The City's Highest Fire Battle

Described by Fire Commissioner Patrick Walsh, in charge of fire fighting operations, as the city's highest fire fighting, the struggle "had not been too difficult," except for the problem of lugging hose and equipment twelve floors and more from the sixty-seventh floor, where elevator service ceased, up the stairs, through the smoke and heat to floors immediately below those involved by fire, where they made connections to the building's standpipe system. Fortunately, the collision and explosions had not seriously damaged the building's fire protection system, which was given its first severe test.

The initial companies to arrive were Truck 24 and Engine 1, with Battalion Chief Arthur Massett of the Seventh Battalion and Deputy Chief Gebhart Bryant of the Third Division. Rescue and fire fighting operations were under way in a matter of moments.

Thirty-fourth street marks the extreme northern limits of the Manhattan high pressure system which was used on the 12-story building at 10 W. Thirty-third street, ignited by falling debris.

It is disclosed that on the 78th floor of the Empire Building there was a considerable amount of paint. Claims for losses of $1,000 worth of paint have been filed by the contractor (or painter) whose materials were stored there. This floor had no flooring or trim completed, all of which helped reduce the fire and loss.

The Empire State Building's engineer reported to Chief Bryant that he had started the building fire pumps and asked for instructions on pressures.

Truck Co. 24, first on hand, immediately ordered them "as high as they could go" and took over the house line just below the fire and were working up the stairs when the first engine company members arrived. There was no delay in getting water onto the blaze—the men were not waiting to substitute regulation fire hose for the hose lines, as is the custom.

Fire Alarm Headquarters Busy

The first alarm for the disaster was received by the Manhattan Fire Alarm Telegraph Bureau, Supervising Dispatcher Gerald Cruise in charge, at 9:52 A. M. from box 681 located at Fifth avenue and Thirtieth street. Strangely enough this was turned in by Fire Lieut. William Murphy of Engine Co. No. 1 who heard the crash and saw the smoke while on an inspection tour and snapped the nearest box.

Truck 24, located on W. Thirty-third street, was en route to the fire 30 seconds after the crash.

One of the most unusual alarms was sounded by William Sharp, a laborer, at work on the seventy-third floor when the plane struck. He is reported to have been thrown against a wall of the building by the shock of the impact and he swung a shovel that he was holding against a building fire-alarm box on the wall, breaking the glass and transmitting an alarm.

Members of Truck Co. No. 24, Water Tower Co. No. 3 in their quarters on Thirty-third street, nearby, hearing the crash were ready to roll when the alarm sounded. Some of the crew of Engine Co. No. 65 on Forty-third street, half a mile north, saw the plane flying low down Fifth avenue and heard the crash. They too were ready, awaiting the expected alarm but had to wait for the second as the box pulled is just outside their first alarm district.

Here is the chronological summary of the alarms and responses and movement of apparatus:

A.M.

9:52—Box 681, bringing Engs. 1, 14, 16, 26; Trucks 24, 7; Dep. Chief, 3rd Div. Batt.; Chief, 7th Batt.; Water Tower 3.

9:52—Boxes 714, 695, 696, 660, 723, 713 (pulled twice); 725 "not sent out."

9:53—Boxes 733, 749, 715, 788 (Broadway and 42nd Street) not sent out.

9:54—Box 748, also 706. Not sent out. At this time special Building Box 3-962-7 for a fire at 305 E. 63rd Street was received and apparatus dispatched.

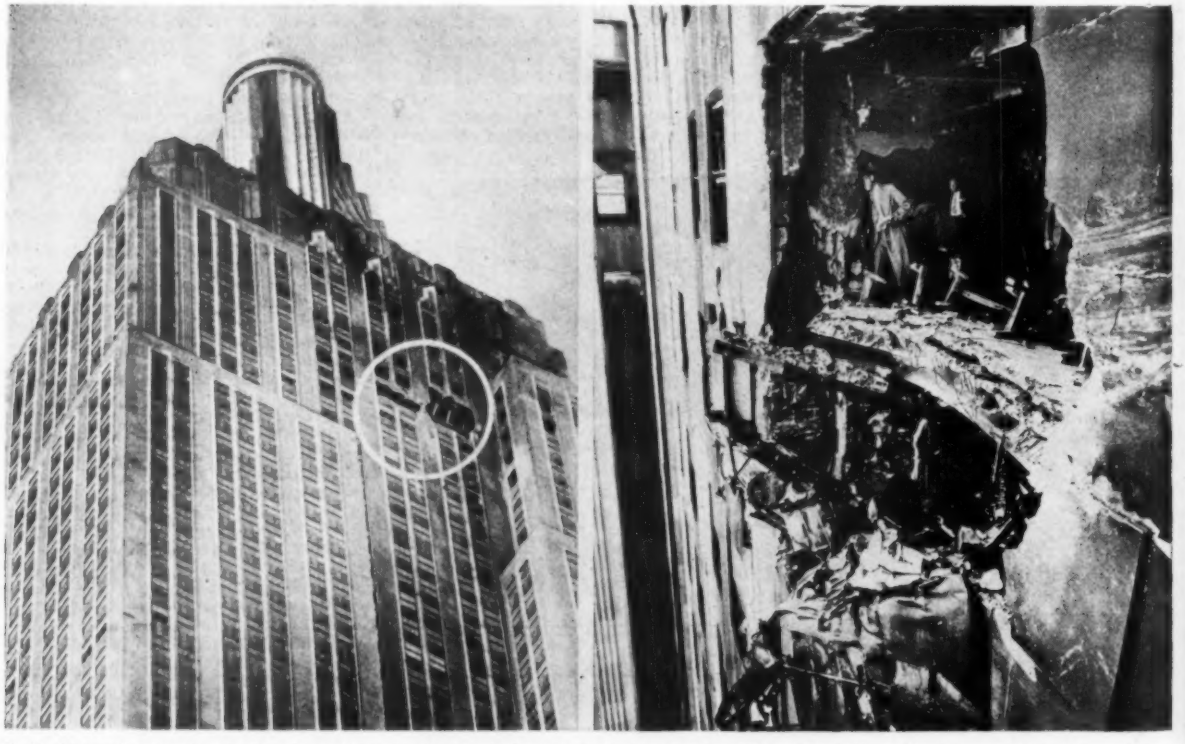
9:55—Signal 22-681, second alarm, bringing Engs. 65, 19, 72, 21 and 34; Truck 21; rescue 1.

9:55—The Empire State Building's own building box, 3-715-1 was received but not transmitted as first alarm companies were already at the scene.

9:59—Signal 33-681, third alarm, bringing Engs. 5, 18, 54, 3 and 8; Truck 12; Chief of 8th Batt.

10:00—Signal 44-681, fourth alarm, calling Engs. 2, 33, 25, 28, 13 and 23; Truck 3; Chief, 3rd Batt.

10:10—8-681-175. Increase pressure on high pressure mains to 175 lbs.



Right: Where Bomber Struck. Two Floors Were Involved as Indicated. Left: The Gaping Holes (Circled) at the 78th and 79th Floors of the Empire State Building Marks the Place Where the B-25 Army Bomber Crashed Into the Structure

10:09—Signal 777-6813. Three public ambulances requested, and dispatched over fire and police radio systems to 350 Fifth Avenue.

10:14—Batt. Chief of 8th reports in service from other fire, and to Box 681.

10:27—Telephone notice that citizens in control tower of RCA offices in Empire Building overcome by smoke and help requested. Rescue company notified by radio; dispatched to 78th, 79th and 80th floors.

11:29—Signal 8-681-125. Reducing pressure on high pressure mains to 125 lbs.

Note—Fire alarm bureau records indicate that over 130 telephone alarms were received by operators between 9:52 A.M. and 10:18 A.M. reporting "fire," "fire and explosion" or "plane crash and fire" the Empire State Building. It was utterly impossible to record all calls.

Almost before the last fireman had leaped from his truck, hospital and Red Cross disaster units were on the scene. While fifteen Red Cross aides dispensed coffee and doughnuts to toiling fire fighters, two disaster units from Bellevue Hospital replete with latest equipment were making their way into the upper reaches of the building to render first aid and assist in rescue work.

Within the twelve minutes during which companies with over forty pieces of fire fighting apparatus and other emergency vehicles reached the scene, over 300 police and squads of Army and Navy units, including military police and shore patrols, moved in with almost clocklike precision.

A seventeen-year-old Coast Guard Hospital Apprentice, Donald Maloney, was one of those who gave first aid in the early stages of the disaster. Because of his small stature he was elected to crawl through the breached wall in the basement into the wreckage of the fallen elevator car and help remove two injured women—one of them the operator—who fell with the cage.

Although civilian protection and the auxiliary fireforces have been disbanded, many former volunteers were on hand.

Over 300 police, including 110 detectives and plainclothes men, three police emergency trucks and about forty police radio cars were at the scene. Chief Inspector John J. O'Connell and Deputy Chief Inspector John J. Gallagher were in charge.

The city's hospital system rushed twelve ambulances, twenty doctors, twenty nurses and twelve stretcher bearers. St. Vincent's Hospital dispatched three ambulances, five doctors, four nurses and one attendant. An emergency hospital was established in the Thirty-fourth street lobby of the building. These units and the fire department all won praise from Lieut. Gen. Hugh A. Drum, president of the building.

Mayor Fiorella LaGuardia made a hasty trip in his radio equipped police car from the City Hall.

From the Mayor, the flight history of the plane in its fateful course was learned. The Mayor released a report from Commissioner John McKenzie of Marine and Aviation which said that the plane called the LaGuardia Field control tower saying that it was fifteen miles to the south, and requesting the Newark weather. As that would place it close to Newark, the chief operator suggested that it call Newark. Within two minutes, however, the plane appeared directly southeast of LaGuardia and the operator, thinking it was about to land, gave it the necessary information about the runway to use and the wind velocity and direction. However, the pilot said he wanted to go to Newark.

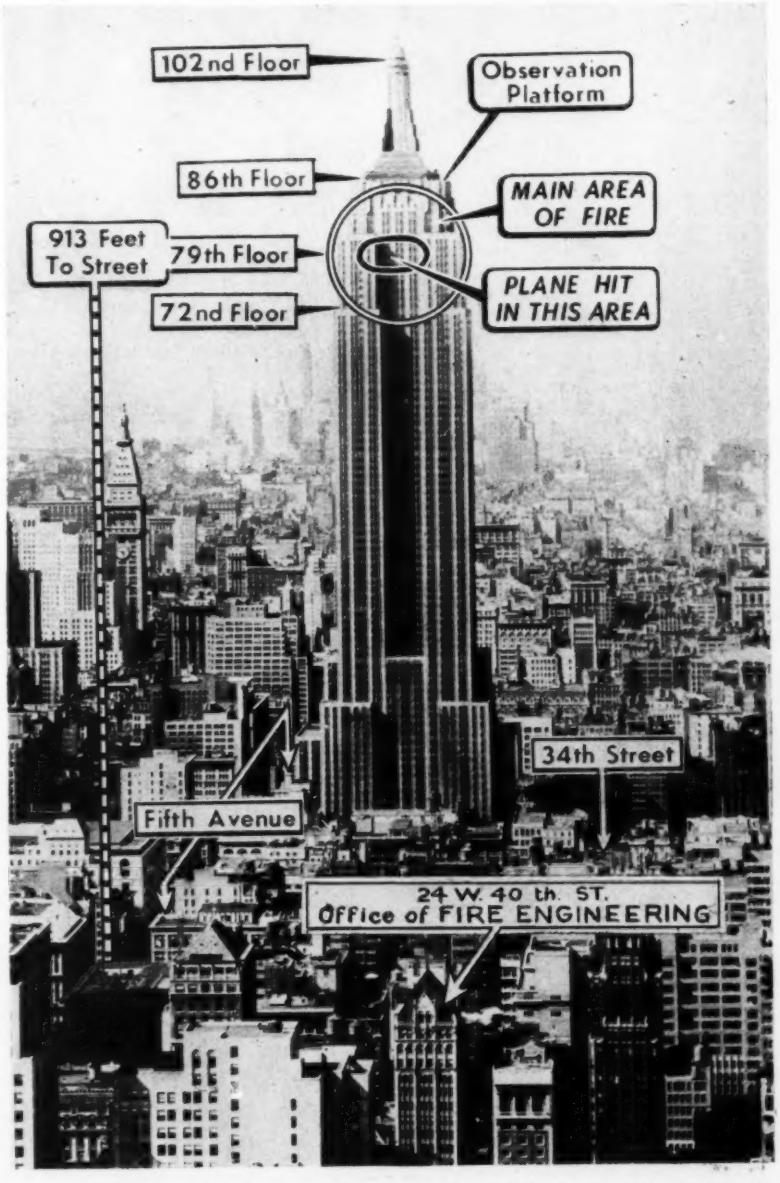
Commissioner McKenzie said that the tower made contact with Airways Traffic Control, which reported there was a 600-foot ceiling at Newark and suggested that the plane be held at LaGuardia. The tower then communicated with Army Advisory Flight Control for authorization to bring the plane into LaGuardia.

Since this was an Army bomber, the tower requested instruction from the AAFC, the Commissioner explained. He said that the Army told the tower that the Newark weather report was erroneous; that actually there was a 1000-foot ceiling and 2¼ miles visibility at Newark. The tower relayed this information to the pilot and asked his decision. He replied he wanted to go to Newark.

"Our tower then cleared him to Newark and stated that they (the tower) were unable to see the top of the Empire State Building and he would clear with three miles forward visibility, and if unable to obtain three miles forward visibility he was to return to LaGuardia. This is definitely contact clearance" the Commissioner's report said.

It was disclosed the plane was en route from Bedford, Mass., to Newark "on the final lap of a cross-country flight originating at its home station in Sioux Falls, S. D."

Both short wave fire and police, and commercial broadcast radio played im-



Key Areas Involved in Bomber Crash Into the 79th Floor of the Empire State Building Are Located in This View Looking South, with North Side of the Structure Shown. This Picture Was Made Prior to July 28th Unparalleled Accident. Fog Shrouded the Top of the Building on the Day the Plane Crashed Into the Building, Making General Views of Crash Area Impossible

portant róles in the emergency. The Mayor received notification of the crash via short wave radio in his police car, as he was entering the City Hall. The fire department used its own radio —station WNYF—to direct fire and rescue operations and summon ambulances. The Department's walkie-talkie," operated by members of Rescue 1, was reported to have given invaluable service in maintaining communications between fire fighting units,—communications which could only have been maintained by radiotelephone ,in view of the extent and nature of the fire area and department operations.

All of New York's commercial radio stations carried running, and graphic stories of the disaster. WOR's air conditioning expert, Edwin P. Kenny was taking his morning weather readings atop the twenty-five story building at Fortieth street and Broadway when he saw the accident. Rushing to the studios below he informed announcer Ed Pearson, who put it on the air at 9:49 A.M. In a matter of minutes, the news was being broadcast by the networks throughout the nation. Actually, one of FIRE ENGINEERING'S editors heard the first announcement of the disaster in Toledo, O., over one of its local stations within ten minutes of the time of the crash and two minutes later was talking with New York observers over the long distance telephone. Such is the efficiency of modern communications.

Conclusion

Following the disaster a three-man investigating board was set up to study the cause and results. Mayor LaGuardia unhesitatingly placed the blame upon the pilot, Lt. Col. William Smith, Jr. saying "If the pilot had been up where he belonged there would have been no trouble."

Regulations in the area are said to call for maintenance of a 2250 feet elevation over the city but it is known that this order is continually disregarded.

The Army is said to have accepted full responsibility for the disaster and at this writing is receiving claims for loss of life and/or property resulting from the crash. The property loss has not been established but is reported to exceed $500,000 for the Empire State Building and between $75,000 and $100,000 for damage to neighboring property.

Several conclusions may be drawn from the accident. First, low flying over occupied and built up areas in hazardous, particularly in unfavorable weather. Second, disasters of this sort should be anticipated by municipal emergency services—particularly fire and police—and plans to combat them, beforehand. Broadcasting of events by commercial broadcasting stations or networks should follow a predetermined pattern, which should be part of the plans and programs developed for coping with such emergencies.

The tragedy gave an idea of what wartime bombing might be like in areas containing modern buildings and what may be expected in the postwar years of heavy aerial traffic. It should give chief officers of fire departments cause to think and plan for better safeguarding their own communities.

The Building Fire Protection System

The Empire State Building measures 197 feet on Fifth avenue and 425 feet on Thirty-third and Thirty-fourth streets, covering an area of 83,580 square feet and containing 37,000,000 cubic feet inside of its 102 stories. There are 63 passenger elevators and four freight cars; the former reach the 80th floor level in one minute. All elevators travel at the rate of 1,250 feet a minute.

The building is equipped with fire alarm signal boxes connected with the American District Telegraph Company's central office and from there relayed to the city fire department. The signal for the building is 3-715-1 which means Special Building signal for street box 715, the terminal one indicating the Empire State Building. Pulling of a building box sounds alarm signals in elevator shafts, engine and pump rooms, house detective's quarters, first aid room as well as the operating offices of the structure.

The building is plentifully equipped with first aid fire fighting appliances and there are three special "fire trucks" designed for wartime defense use by the building fire brigade, which is composed of the working personnel of day and night shifts.

The standpipe system is fed from water mains on Fifth avenue, Thirty-third and Thirty-fourth streets. A special four-inch water supply pipe under Thirty-third street is exclusively for fire fighting purposes. The building has five risers eight inches in diameter, two of which extended to the 83rd floor, two others to the 30th floor and one to the 18th floor. The entire fire standpipe system embraces 7,340 feet of pipe and six miles of hose connected to 2½-inch outlets on all floors.

There are five water supply tanks and five pumps throughout the building. In the sub-cellar is a 750 GPM pump and a 10,000 gallons capacity tank; another pump of 750 GPM is on the 20th floor

Two Views of the Empire State Building Fire. Left: Shortly After the Bomber Crashed. Smoke at Bottom Is from Neighboring Building Where Fire Was Started by Falling Debris. Right: As the Fire Was About Under Control.

and a tank of 5,000 gallons on the 21st floor; the 41st floor has a 750 GPM pump and the 42nd floor a 5,000 gallons tank; the 62nd floor a 750 GPM pump and the 63rd floor a 5,000 gallons tank; the 84th floor a 280 GPM pump and the 85th floor a 3,500 gallons tank. These tank capacities are net volume for fire fighting only, although each tank has many times that more capacity, for commercial and domestic use.

Ten siamese hose line connections are located around the building for use of pumping engines of the fire department. Four of these are on Thirty-third street; four on Thirty-fourth street and two on Fifth avenue. These connections are for 3-inch hose couplings and they lead into six inch connections to the standpipe risers.

There are 324 hose outlets on the floors for 2½-inch connections. The system has twenty-seven control valves on vertical pipes and forty-nine control valves on all other pipes which will enable the fire department to detour or by-pass the water in case of a rupture in the piping or for some other emergency.

The 84th floor pump and the 85th floor tank are for fire service in the tower only. The highest outlet in the system is reported to be 1,230 feet high. The "mast" of the building is 1,250 feet above street level. The system has been constructed to withstand a pressure of 100 PSI at the highest outlet. Each pump is required to deliver water to the tank beyond the next highest intermediate pump and tank station.

FIRE ENGINEERING editors are advised that Mr. C. L. Brown, the present general manager of the building acts as the fire chief. At the time of the fire, the engineers reported at once to Chief Bryant of the 3rd Division on the Thirty-third street side, that building pumps were operating and that 75 lbs. pressure was being maintained. This pressure was held throughout the fire.

FIRE GUARD FOR PIERS AND SHIPS MAKES NOTABLE WARTIME RECORD

Organization Set Up Following "Normandie" Disaster Prevented Any Major Fire on Ships and Piers

By Jerry Daly

THE benefit of efficient and conscientious fire protection when competently supervised, may be found in the three year fire record of the recently terminated special fire protection detail to several giant piers and ships on the west side waterfront of New York.

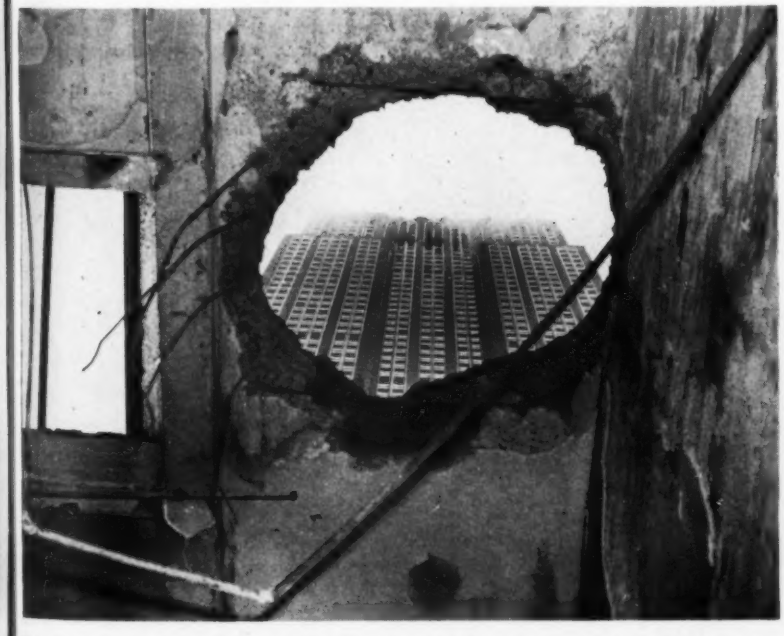
The record shows that between the time of the S. S. Normandie* fire on February 9, 1942, and July 5, 1945, when the detail was dismissed at the request of U. S. Army authorities, there had not been one fire of major proportions on any of the piers or ships where the Fire Department special detail was maintained. There were 152 fires of record during the three year period, of which 105 were quickly and effectively extinguished at the point of origin by New York firemen on the spot. City fire apparatus responded to forty-seven of the fires of which thirty-seven required some operations by the responding forces. Ten were precautionary alarms. There was one second alarm for a fire on H. M. S. Aquitania, but that extra alarm was precautionary. The second alarm companies and fireboats stood-by "just in case." One Normandie disaster was enough.

When that infamously, incautious fire of disgracefully careless origin had put the French luxury liner out of the war with lamentable loss to the cause of the Allies, the British Government quickly asked Fire Commissioner Pat Walsh of New York to make a special detail of firemen and appliances to those piers where H. M. S. Queen Mary, H. M. S. Queen Elizabeth and lesser prides of British Admiralty were coming and going with heavy international responsibilities. The request was met promptly by Chief Walsh in cooperation with the U. S. Army under the supervision of Lt. Roscoe Savage, USA, Fire Marshal in charge of the North River Terminal of the Port of Embarkation.

The Fire Department's Assistant Chief-In-Command John J. McCarthy, arranged the details and supplied men and appliances such as hose, nozzles, extinguishers, etc. One officer and five men with 1,000 GPM pumpers were assigned to the principal piers. Suctions were dropped overboard and discharge lines were kept connected. As time wore on and "nerves" settled and more firemen went off to war, the size of the special detail was reduced and 17 army trailer pumps of OCD issue replaced the heavy duty fire apparatus.

The Fire Department managed to get along with one officer and two firemen per pier, per ship. When there were two ships on opposite sides of a pier, one officer and four men comprised the detail. The detail was maintained only when a transatlantic liner was in. The personnel of this special detail was composed of casuals assigned in their turn from fire stations on Manhattan Island. Since most of the piers were in the Ninth Battalion, the Chiefs of that district who are stationed at 48th and 8th, did practically all of the supervision with the higher responsibility resting on the Chiefs of the 2nd and 3rd Divisions which include the waterfront from Houston to 59th. The assignment was a bit of a drain on an already depleted fire fighting force due to the loss of approximately 1,600 men in military service.

*Renamed U.S.S. Lafayette but never used as such.



This Odd View Was Taken Through Hole in Roof of Penthouse on 33rd Street, Across the Street from the Empire State Building. Part of the Crashed Plane Landed Here and Set Penthouse Afire

Protection of Shipping

The Marine Division of the Fire Department had a special responsibility. When any vessel steamed into the port of New York, it was the duty of the Chief of the Marine Division to go aboard with particular eye to the maintenance of the magazines where ammunition for the ship's protective guns is stored. There were many other apprehensions to agitate the firemen and the Army fire guards. Every time an acetylene torch was used on a ship or a pier, the fire detail automatically thought of the Normandie and stood by until the welding job was done. On the other hand there were the commonly pesky problems of smoking (permitted in crew quarters) with its obvious risks. Smoking is forbidden on deck and dock but violation of the rule is still a headache to the authorities. Particularly is the

(*Continued on page 574*)

Washington Wallops Grain Fires

By O. A. FITZGERALD*

THERE probably still are a lot of people who are firmly convinced that grain and field crop fires, like death and taxes, are inevitable, but they do not live in the State of Washington. Washington grain farmers have gone through a great awakening on this point. So if you cling to the notion that this kind of fire is different from all other kinds and just can not be avoided, listen to what the pioneering Washington has done in this new field of rural fire defense, how it did it, and, above all, the satisfactory dividends that have been collected. It is a definite triumph in the field of rural fire engineering with a definite lesson for all other agricultural areas where field blazes have a habit of consuming large amounts of grain and other field crops every fall.

At the start it should be clearly stated that up to 1942, only three years ago, when Washington began its organized and intensive campaign to do something about grain fires, most of the grain growers in this state, too, shared the traditional belief that grain fires were just another unavoidable hazard and that about the best you could do was hope that your field wouldn't catch fire and burn up. It was a fertile field for pioneering, for in Washington's thirteen eastern counties giant grain and pea fields stretch in all directions in almost endless succession. It is one of the country's biggest grain belts, where many operators handle 5,000 to 10,000 acres apiece. This land of big farms likewise was a land of big grain fires, providing every fall some of the country's most spectacular field blazes.

Since 1942, the grain farmers in these same thirteen eastern Washington counties have proved that grain and field crop fires aren't a great deal different from a lot of other kinds of fires, except perhaps that they are spread out horizontally instead of rising vertically, and that something definitely can be done to forestall their destructiveness. The start along that road came early in 1942 when, as part of the state's food-for-war activities, William A. Sullivan, Washington's State Insurance Commissioner and Ex-officio State Fire Marshal, decided that something ought to be done about the terrific annual loss of grain by fire. Wheat and peas were being called for in almost unheard-of quantity to feed our fighting men and our allies. Sullivan realized that fields burning up before harvest time couldn't make much of a contribution toward victory.

Burgunder Placed in Command

He went down to Colfax, Washington, the county seat of Whitman County, one of the largest grain-producing counties of the thirteen and also one of the leaders in the nation, and asked Leonard L. Burgunder to get a wartime leave from his hometown job and take on the job of defending Washington's vital grain fields against fire. Burgunder, who has made a lifework of fire defense, gladly accepted the invitation. Thus began Washington's significant pioneering in the hitherto untouched field of grain-fire defense.

Burgunder was picked for the job because in his home community he already had a reputation as a crusader against all kinds of fire. Even before Pearl Harbor he had been working with farmers of Whitman County on a fire prevention project. As a result, this county already was making progress in checking grain fire loss when the state campaign opened. Burgunder's hatred of fire was born in 1911 when a blaze completely destroyed the family home. A sophomore in high school at the time, the lad became so embittered he took to fire fighting as a hobby. For thirty-four years he has been a member of the volunteer department of his home town, for many years its chief. He has fought hundreds of fires, has been made an honory life member of the state firemen's association as a result of his crusading and now he is on leave for the duration carrying on what is perhaps the biggest and most important fire defense assignment of his long career. Burgunder now carries the title of Deputy State Fire Marshal and works out of Spokane, where his headquarters are in the Columbia Building. He is the kind of fellow who spends his vacations visiting other fire departments to get new ideas.

Up to 1942, just about all that the State of Washington knew about its grain fires could be boiled down to these two sentences: First, an alarmingly large acreage of grain was burned up every fall with losses running into the hundreds of thousands of dollars. "Unknown" and "started on the highway" appeared in the insurance adjuster's reports most of the times as the cause.

From his experience in Whitman County, where he already had spent considerable time on the side working with farm people on fire prevention, Burgunder realized that the first need was for some definite evidence on just what caused all these grain fires. "Unknown" and "started on the highway" certainly were not very enlightening.

"Before you can do anything in a pre-

*University of Idaho, Moscow, Idaho.

History Was Written in Washington When, at Ritzville, Five Rural Units Assembled Their Trucks at a Farm Machinery Show. The Five Units Represented $18,500 Worth of Equipment, Ranging from $6,500 for the Most Expensive to a $1,000 Home-Made Unit. During the Previous Year They Averaged Thirty-Three Calls Apiece and Saved a Tremendous Amount of Farm Property. This Gathering, in March, 1944, Was the First Assemblage of Rural Trucks in the State of Washington.

ventive way, which after all is the most important avenue of approach in fire defense, you ought to know something about the causes," he said. "In a city, for instance, a man in one part of town usually can read in his local paper what has caused every fire. But a big grain field, worth more than many city buildings, can burn up completely and not many farmers ever will know the cause, and thus be prepared to avoid a repetition on their own farms. Part of this is due of course to the basic philosophy that grain fires were unavoidable. I suppose that they felt if a thing was inevitable it made little difference what was the cause."

Burgunder's first big job in 1942 therefore was to dig deep into the background of every grain fire breaking out that fall. His records showed the alarming total of 190 fires. They started not from one or two simple sources but a grand total of thirty-nine. Here was the information he needed to talk to the grain farmers. As he fully expected he was met everywhere with the same indifference; some farmers telling him rather pointedly he was just wasting his time.

Farmers Skeptical

One of the first meetings he held was rather typical. A group of 18 farmers in a section which had produced more than its share of grain fires every year were called together. Before Burgunder even had a chance to parade his impressive statistics, one of the farmers, a big grower, bluntly stated, "You can't stop these grain fires—they just come." All the others at the meeting chimed in their approval. The chairman of the meeting leaned over to Burgunder and whispered, "There, Burgunder, is what we're up against. I don't believe you can do a thing here."

After every farmer in the group had expressed his opinion, which was pretty much of the same pattern, Burgunder took over. He went down the list of the 190 fires arising from the 39 different causes during the 1942 season, which had caused losses of around half a million dollars in grain. After he reviewed every cause he even had the farmers themselves admitting that all of the fires but 18 actually could have been prevented. Those 18 which even Burgunder had to admit were unavoidable were the result of dry thunderstorms sweeping over the grain fields. He had the answer for careless smokers, careless farmers, and careless railroads, but he couldn't suggest ways to keep lightning bolts from the sky from starting occasional fires. This pattern was duplicated in meeting after meeting. During 1942 Burgunder certainly did a lot of travelling. All told he met and talked with around 10,000 grain farmers in the thirteen counties.

It was a shocking eye-opener to the grain farmers to learn from Burgunder's field study that they themselves had it within their power to prevent over two-thirds of their grain fires. For instance, tractor and truck exhausts had been responsible for 92 of the 190 fires reported and studied in 1942. Losses from this cause alone passed the $300,000 mark. When it was pointed out to them that the exhaust could be neutralized as a fire threat by installing a spark arrester or by turning the pipe skyward so sparks wouldn't be shot out into the dry grain, there was a big rush to local blacksmith shops to have this done.

The extensive crusading based on the 1942 study bore fruit in 1943. That year Washington had only 34 grain fires all together, the losses for which were about $35,000, which was a tremendous drop from the nearly $500,000 in losses resulting from the 190 fires of the year before. Most significant of all, however, was the fact that instead of the 39 different causes reported the year before, the total for 1943 was down to nine; lightning, exhausts, burning weeds, burning stubble, railroad sparks, filling gas tank, hot-box on combine, chaff on truck motor, and smoking in the field. Almost complete victory had been scored over the tractor and truck exhausts, these having been responsible for only a dozen fires, in contrast to the 92 the year before.

Although it is perhaps inevitable that actual fire fighting activities rate the most and the largest headlines—they are more spectacular than fire prevention work—this represents only about 10 percent of what Burgunder is doing. In other words, around 90 percent of the emphasis is on prevention. Thus the big accomplishment of 1943 was the planting and the nurturing of the philosophy that grain fires could be prevented.

Carelessness Chief Cause of Fire

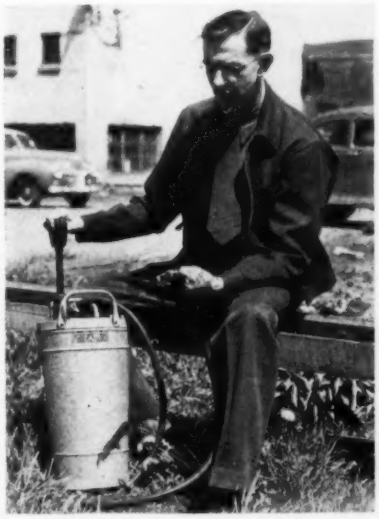
In the grain field, as in the largest city, Burgunder not only contends but has proved that carelessness is the principal cause of fire. To illustrate: There was the farmer who stopped to adjust his combine motor in the field. As is always the case with farmers at harvest time, he was in a hurry. When he had finished the adjusting he left the screwdriver he had been using on the hot manifold. If farmers are going to do things like that very often they should use all-metal screwdrivers, for this one rode along on the manifold until it got so hot the wooden handle began to burn and then it fell off. That farmer didn't have to hurry to harvest the remaining 200 acres of his wheat field. The blaze started by the screwdriver handle when it fell into the stubble did it for him.

In fire defense, as in a lot of other things of life, it often is the little thing that has the greatest consequence. One of the puzzles Burgunder encountered was that so many fires around combines and parked grain trucks broke out during the noon hour when the crews were at lunch. Careful investigation revealed a very sound reason for this. Straw and chaff accumulate on the running parts of combines and on motor manifolds. Running the truck with the hood up, as is common in bulk handling, was an invitation to the chaff to come in and ride. As long as the truck was running these accumulations seldom caught fire but when it stopped at noon they frequently did. Hot boxes on combines ignited piles of the chaff, leading Burgunder to preach forcefully the gospel of cleaning and greasing as fire defense weapons. As a result of this part of the study the ordinary whiskbroom has become an important fire prevention tool in Washington grain fields. Truck drivers and combine crews use them frequently to brush chaff and straw piles off danger spots. A growing practice is to put a guard over the combine and trucks during the noon hour.

The Washington investigations have definitely proved that the actual fighting of a grain fire calls for just as much intelligence and cool-headedness and organization as fighting one in a fifteen-story city building. "You don't see a city fire department waiting until the alarm rings to get its hoses ready, fill its chemical tanks, and assemble its ropes and ladders," is another bit of the Washington man's philosophy. "Neither can a grain farmer afford to wait until the call comes to get his shovels and other essential fighting equipment ready."

Many of the worst grain fires have been a direct result of farmers being convinced that such blazes are inevitable, hence they didn't do anything in the way of defense preparation in advance of harvest. Sure, farmers turned out quickly and worked hard every time a field did catch fire. Neighbors rallied to

A Typical Trailer Unit for Use Behind Either Truck or Tractor. This One, Maintained by the Dusty, Wash., Farm Bureau, Carries a 200-Gallon Tank and Hand-Operated High Pressure Pump Delivering Two Garden Hose Streams



Leonard L. Burgunder, the Guiding Hand Behind Washington's Grain Fire Defense Accomplishment, Looks at One of the OCD Pumps That Already Have Demonstrated Their Right to a Place as a Fire Fighting Implement in the Grain Fields

the call but there was a lot of wasted effort and sometimes not much accomplished.

For instance, there was the fire when six well-meaning neighbors rushed to the burning grain field with their tractors—enough motive power to have torn up a lot of ground in a few minutes. But when they got there they found there wasn't a plow around and no matter how many tractors you have it takes a plow to throw up a firebreak. When one finally was located there wasn't a hitch. Then there was the farmer who was out in his grain field with his pickup truck when a fire started, perhaps from the sparks dropped by his truck exhaust. In excitement he climbed out of the pickup and ran a quarter of a mile to the house to get a shovel. By the time he got back it was too late. Anyway, he was too near worn out to have been able to do much work with it.

Farmers Prove Enthusiastic

Farmers still pile out en masse whenever a fire call comes, although they are doing everything now to prevent such calls, but there is a big difference in what they do and how they do it after they reach a burning field. It isn't uncommon for 50 to 100 farmers to turn out but there is no bedlam, no missing equipment; everyone knows what to do, how to do it, and has the equipment needed. Such is the fruit of organization and planning.

Burgunder has taught the grain farmers to work on a grain field fire from the rear, not head-on. It used to be that men would plant themselves in front of a fire and with swinging gunnysacks try to turn it back. Often it was about as futile as King Canute ordering the waves not to lap at his feet. Also, having to work in the path of a fire is hard on the fighters. Burgunder's work has proved that fighting the fire from the rear is much more effective, and, also of considerable importance, is much easier on the fighters.

Washington is now in what might be called the second major phase of its grain fire defense work. This is the development of fire protection districts with speedy mobile units. When Mr. Sullivan decided in 1942 that grain fires were getting entirely too much Washington grain, there were only two rural fire districts in the wheat lands.

There are now organized in the State of Washington, forty-nine rural fire protection districts, each of which has a splendid piece of equipment. There are seven districts which have equipment but while not organized under the state law all are in the process of coming under the state law. This law, adopted in 1939, authorizes a financing levy of not to exceed 4 mills, although the average cost so far has been around 2 mills. There are seventeen more districts without equipment but in the process of formation under the state law, which means that a total of seventy-three rural fire departments are very likely to be in operation when the next grain harvest period arrives. The value of the equipment already in use in the State of Washington for rural fire protection, mostly in the grain fields, is approximately $300,000.

The LaCrosse, Wash., Unit Has Two Trailers, One a 4-Wheel and the Other a 2-Wheel Unit. One Is Equipped with a 470-Gallon Booster Tank and the Other with a 165-Gallon Tank. Both Have Auxiliary Pumps

The districts are planned for efficient and intelligent operation; the radius or average run does not exceed 17 miles. Normally the trucks are maintained and manned by members of the volunteer fire department in the central town, although upkeep costs are paid by the rural district. In return for this service the cooperating town department has the right to use the truck itself, thus giving it an extra piece of equipment in case of emergency. This horse-trading has worked out very happily not only from a fire defense angle but from a social standpoint as well. Burgunder reports that a close tieup between city and rural fire defense units has contributed greatly toward the development of good will and friendly relationships between the cities and the surrounding rural areas.

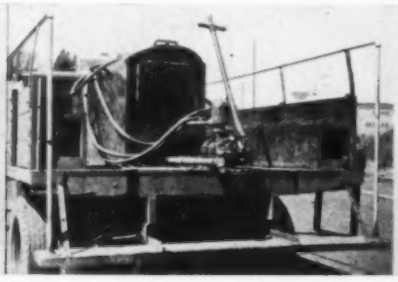
Just what these mobile rural units have meant is well illustrated by a comparison of two counties. The four rural departments in one of the largest grain counties went out on thirty-five calls. Because of their speed, organization, and efficiency the grand total loss of grain was only $1,135. Yet in another county, with no rural departments yet in operation, there were eight grain fires, for which the total loss was approximately $70,000.

Many of the local units have contributed valuable ideas in providing their own mobile units. One unit, for example, has a trailer unit which starts out from town behind a truck, is quickly transferred to a tractor when it reaches the grain field, since the tractor can do a better job hauling it over the field. Another department has an efficient home-built unit with a shallow-well pump installation excellent for pulling water from streams or irrigation ditches.

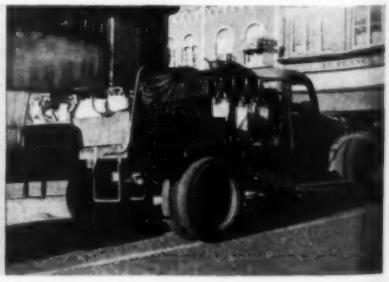
Although originally built to douse the incendiary bombs everyone felt sure the Japs would drop in great numbers along the Pacific Coast, the 4-gallon OCD hand pumps have a bright future as fire defense weapons in Washington grain fields. When the Japs were shoved back beyond the danger point the Washington State Defense Council had thousands of these pumps in storage. Burgunder borrowed 700 of the pumps prior to the 1944 harvest and passed them out to combine operators. "We have actual records to show that these OCD pumps saved seven of the big combine harvesters during the 1944 season, a saving of many thousands of dollars," he reports. The 1944 experiment was so successful Burgunder is out to get 2,000 more of the pumps prior to the 1945 harvest; his goal is to have one on every combine.

Washington has worked out the technique on grain fire defense and control

It Cost the Washtucna, Wash., Rural Fire Unit Only About $1,000 to Get This Complete Unit, a Made-Over Light Truck. It Contains a 640-Gallon Tank, and a Three-Stage Centrifugal Pump That Will Handle Four Leads of Garden Hose



On an Army Reject Truck St. John, Wash., Mounted a 250-Gallon Tank with High-Pressure, Hand-Operated Pump



A 1½-Ton Army Reject Truck Forms the Basis of This Unit Operated by the Colfax Department. It Carries a 250-Gallon Tank, a Three-Phase Shallow Well Pump and Six OCD Pumps

as it went along. This was the only way it could be done. "One must realize that grain fire protection with mechanized equipment is a comparatively new venture," Burgunder points out. "There are no textbooks available, therefore the technique used must be gained by actual experience and activated by visits to the various rural departments where I pass on the experiences of one to another."

Two cardinal principles stand out as we take a quick glance back over the Washington story. First, grain farmers have learned that the field fires they have thought inevitable can be met with forethought. Everything pertaining to men and equipment can be planned for in advance, just as fire fighters do everywhere else. Even things like wind currents can be anticipated. The Washington plan anticipates danger spots with tricky prevailing winds so that if trouble breaks out there the plan will take the wind into consideration.

Future of Grain Fire Fighting

The second basic point is that while mechanized grain fire fighting is the coming method it never will completely replace the hand crews with shovels and fire mops, who up to now have done most of the fighting. The mop-up crew, Burgunder has found, is about as important as the mechanized equipment itself. This crew, men with shovels, rakes, and mops, must take care of the small spot fires that may again ignite after the mechanized equipment has passed over the area.

Washington's grain fire defense work seems to be contagious. It started with the grain farmers. Now railroads, county and highway commissioners, and others are enthusiastic cooperators. Many fires used to arise from railroads burning weeds along the right-of-way. Now they plow firebreaks before doing it. Every highway district is more aware of its responsibility and willing to accept it. Education is beamed at the general public to prevent fires starting from smokes carelessly tossed out of car windows. But if education doesn't work there are teeth in the law. It's a mighty serious matter to be caught throwing a cigarette out of an automobile in Washington, and every traffic officer is under order to pick up anyone seen doing it.

Every one of the thousands of Washington grain farmers who have participated in this huge piece of pioneering in fire defense have reason to be proud of 1944. It was a year which ordinarily would have brought grain fire losses way up in the hundreds of thousands of dollars, perhaps millions. It was the driest fall in thirty years by weather bureau records. Fields were explosive. Because of the war, total grain plantings in the area were up around 400,000 acres over what they were in 1942, the year Sullivan decided something ought to be done about grain fires. The setting was perfect for a lot of fires, yet the prevention and defense system worked so well the grain fire loss last year, by official record, was less than $150,000. That is no small item to be sure, but it certainly is puny compared to what it probably would have been in a year such as 1944 without the big organized system of defense in which both the 90 percent emphasis on prevention and the 10 percent on actual fighting really functioned.

CHIEF C. CRUZ OF MANILA F. D. TAKES NAVY FIREFIGHTERS COURSE

Veteran of Jap Occupation Sees Modern Fire Fighting Equipment and Methods

By Jerry Daly

FIRE Chief Cipriano Cruz of the Manila Fire Department, a slender iron-hearted Filipino who fought fires in the face of Jap bullets, has completed a course at the Navy Fire Fighters' School in Pearl Harbor. Carrying orders from Gen. Douglas MacArthur's headquarters, Chief Cruz flew to Pearl Harbor and reported to Lt. Joseph C. Crawley, USNR, who is in charge of the school.

Lt. Crawley put in twenty-four years in the New York Fire Department until he was commissioned March 29, 1943, and sent to the Fire Fighters' School near the Brooklyn Navy Yard. He had been a Lieutenant on the fireboat William J. Gaynor and while on military leave was promoted in absentia to the rank of Captain on August 23, 1943, when he was in the Pacific area. He retired by mail from the Fire Department June 9, 1944. He was born in Brooklyn forty-seven years ago.

Chief Cruz a Veteran

Chief Cruz is a veteran of twenty-seven years fire fighting in Manila. He battled fires caused by Jap invasion. His men and machines were met with Jap gun fire when Manila firemen endeavored to stop spreading conflagrations. Twenty of his men were Jap casualties and eleven were fatalities. When the Americans returned to Manila, only three of Manila's fire engines were still in working order to protect the remnants of the once beautiful city. The Chief lost thirty pounds during Jap occupation. A slight and wiry man, he is trying to get it back.

Five Fire Stations Damaged by War

Five Manila fire stations were leveled during the battle, but one prize pumper was saved by Chief Cruz. When our army was retreating from Manila to Bataan, this particular fire engine was turned over to Chief Cruz by an army officer. "Take care of this 'till I get back and don't let anything happen to it!" the army officer commanded. Nothing did; and, as Chief Cruz explains it, "we used cocoanut oil in the crankcase and we ran the motor on alcohol but that engine was working when the army came back to Manila."

Chief Cruz is interested in fog nozzles and intends to improve the type of instruction in fire fighting in Manila where all te fire fighters are Filipinos. Lt. Crawley spoke highly of his prize pupil.

Official U. S. Navy Photo

Lt. Joseph C. Crawley, USNR, Explains the Mechanism of a Fog Nozzle to Fire Chief Cipriano Cruz, Manila Fire Department, at the Pearl Harbor Fire Fighters' School Where Chief Cruz Recently Completed a Course. Lt. Crawley Is a Retired Captain of the New York Fire Department

Why Panics in Public Assembly?

By THOMAS G. FISHER*

PANIC stricken people differ from those citizens we meet every day and it is important for firemen to know why they are different, what causes the change from normalcy and what they may be expected to do. People have been drawn together in war industrial communities, causing heavier congestions than ever before, with the result that our theatres, night clubs and all places of public assembly are overcrowded.

Each year there are examples of panic stricken persons being carried to their death through fire scares—real or imagined, through alarms of every nature from earthquake to hurricane and through no apparent reason at all. We read newspaper accounts of such panics but somehow it never seems to occur to us that we may be present when a panic is in process of forming, or that as firemen we might be able to cope with a panic situation and thus save the lives of many persons.

Optimism is such an outstanding characteristic of the American public that we think the other fellow will be the one to die, or lose his house through fire or suffer any one of a hundred calamities which will pass us by. Many of us have had the experience of participating in some war situation where it could be foretold with mathematical certainty that some of the company would be severely injured or killed, but we felt assured that it would not be us; that we would be the one who would survive.

Lack of Foresight Disastrous

The first factor of any panic situation is the fact that membership is entirely fortuitous, wholly unintentional and arises most often out of a situation the very antithesis of tragedy. Coupled with this is the fact that little if any preparation is made in anticipation of panic. Few visitors of a night club or members of a theatre or high school entertainment audience ever give thought to a second means of escape from the building. The average member will attempt to leave by his means of entrance, and at the same time that every other member will try to escape.

Panics occur in many other places than theatres and night clubs. Some of the most disastrous have occurred out of doors and aboard ships while panic has stricken people in stores, markets, schools and even in their own homes. Every fireman in America has at some time heard the account of the Iroquois Theatre panic and fire, though many seem to overlook the fact that the principal cause of death was panic arising out of fire and not primarily fire burning people to death.

Panic, The Killer

Those men and women who were trampled to death in San Francisco's Shamrock Club and in Boston's Coconut Grove would probably have escaped death by fire if there had been no panic. In Chicago, during the big fire of 1871, a number of persons attempting to escape by the Randolph Street bridge were trampled to death in a panic stampede. Brooklyn bridge was also the scene of a panic caused by a woman tripping and screaming as she fell. The list of school fires and panics which have resulted in death for children in classroom and mixed audiences in auditoriums is long and will continue to grow as long as we ignorantly permit death traps to continue in existence.

That few persons are killed as a result of panic in stores, markets and their homes is due largely to the ease with which they effect an escape when impelled by panic behavior, but panic can and does strike in the home as well as the crowded place of public assembly. A panic can occur and panic behavior ensue in any place where people gather, and at any time.

Panic as a term is loosely used to include panic behavior, but panic is the cause of panic behavior. Webster defines panic as being a "sudden, overpowering fright—terror inspired by a trifling cause or a misapprehension of danger, esp., when accompanied by unreasoning or frantic efforts to secure safety." The fear inspired by a misapprehension can be as terrible as if the cause were well founded, and the behavior that follows, if of an escape order, is activistic and has its origin far back in the history of man.

To illustrate the element of fear and human reaction we can consider the game played at bedtime each night by a mother who has taught her child not to fear the darkness through a game. When he is safely tucked in for the night, mother plays 'ghost' and waves a white pillow case as she makes spooky noises—it is all in fun and since the child has no fear, he laughs and has fun. However, if some neighbor's child were to stay over night and without warning be subjected to this 'ghost' and the spooky noises, the natural reaction, the gripping fear, would probably be convulsions.

The cause of this fear which we call panic arises from some situational crisis as defined by some member. It is axiomatic that there can be no crisis without human definition. What is defined as a source of immediate or potential danger to the individual may be real or imagined in fact, but, to him it is very real and threatening.

Fear Communicated to Others

A genuine case for fear may on the other hand cause no alarm since to the uninitiate there is no evidence of danger. For example the slight sifting of rock dust from the back of a mine drift would never warn the apprentice that a boulder overhead was working loose, nor would the glassy sea and the dark horizon forecast a hurricane to a landlubber.

When some member of a situation defines an event as a crisis, the group as such disorganizes into its individual components. A puff of smoke, a flash of fire or a trembling of a building is sufficient to strike terror into some individual and he will communicate his fear to others. Then it is that the group ceases to be an audience of a play or a speaker, or a class in school, and resolves itself into separate human elements.

Usually there is a moment of stunned silence, a moment when action is suspended as members of the situation grope for a response. What this response will be is unpredictable, for each if left to himself will fall back upon some old habit pattern. What he will do when he acts will not be the result of logical thought nor a determined course of an action based upon reasoning; neither will his behavior be the direct conse-

*Deputy State Fire Marshal of California.

Panic Which Started Upon Discovery of Fire in Sacred Heart College, St. Hyacinthe, P. Q., Was Largely Responsible for the Loss of Forty-Six Lives (January, 1938)

quence of his inborn nature. His actions will be a fortuitous synthesis of his acquired patterns of response, and will differ from all other sociologic behavior in that the consequences are unpredictable.

Following the period of stunned groping for a release from fear, there will be interaction in the situation membership. This will at first be un-coordinated since the membership is not only unintentional but little if any preparation for panic adjustment is provided the average member in the course of a normal civil life. Collective panic behavior of the membership follows if for no other reason than physical contact, though frequently collective reaction may result from a cry or a motion made by some individual. The specific pattern of panic behavior of any group taken collectively arises out of the individual heterogeneous reaction of that group to the crisis.

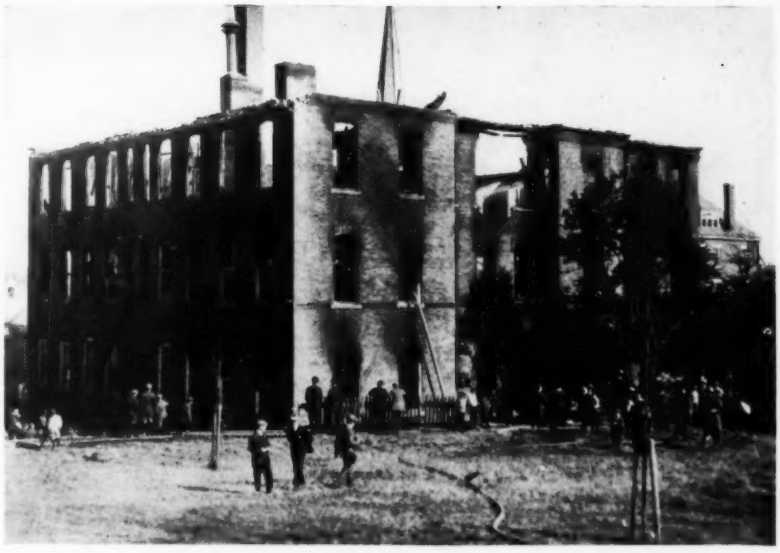
A collective solution to a crisis panic behavior is never expedient. It is at best an adjustment away from that which was defined as threatening—an escape or attempt to escape through avoidance rather than adjustment to the crisis by correcting the condition of cause. In the Battle of London there was an outstanding example of a whole city adjusting to a crisis situation in fact and by this adjustment actually stifling panic causes. So profound was this adjustment that even boys of school age fought fire bombs, though they were often burned and many were killed. But there was no panic.

Different Reactions in Panic

The single ideology most frequently offered in explanation of panic behavior is that man is but a higher order of animal who responds as an animal when in terror stricken panic, but this does not accord for more than those stampedes when persons ore trampled under foot. If we assume that man will invariably assert his bestial nature in trampling, pushing and fighting for survival, we fail to take into account those panic situations when the diametric opposite response is made. Man has frequently manifested a godlike quality in his sacrifices made in panic, as for example on the sinking of the Titanic and Lusitania when many gave their lives that their companions and families might be saved. It has been suggested that mental inferiority might account for certain persons being seized by panic, but experience has shown neither education nor mental capacity are indices upon which to base forecasts of panic response. Neither does the cultural or social background prove a true standard, for those in the orchestra pit of a theatre are just as prone to panic behavior as those seated in the gallery or on the mezzanine.

What the order of panic behavior of any specific group will be cannot be predicted but in any case it will assume one of the following patterns. It is possible that a second pattern may subsequently develop, arising out of the situation engendered by the first pattern of response.

Individual suicide is likely to be the first pattern of panic behavior and in this there is little more than the manifestation of some individual's effort to escape the crisis through means which results fatally to himself. Frequently his example may be emulated by others,



A Stampede of 700 Pupils in This Parochial School at Peabody, Mass., Following Explosion and Fire, Resulted in the Loss of Thirty Children (October, 1915)

but the pattern is still that of individual suicide. In the Morro Castle ship fire many persons jumped from the rail into the sea in a panic stricken effort to escape death by fire only to perish by drowning. These persons might have been saved if they had waited until the ship lost seaway and hove to, since then boats would have picked them up at once, but instead they died in the last two or three miles of the ship's wake.

Collective suicide is the pattern most commonly associated with panic behavior since it results from the sum total of all the individual responses in a cumulative effect. This results in the running, pushing, jamming, crushing which we label as 'stampede' and which has claimed so many lives of children as well as adults in places of public assembly. While the locked door in Collingwood School caused many children to be trapped, many others committed collective suicide by running and jamming the stairway. This is the identical pattern which resulted in the loss of life in the Iroquois Theatre fire, the recent night club fires and many other tragedies involving loss of lives which could have been minimized through proper preventive measures.

It is interesting to note that in this pattern of behavior the loss of life results mainly from the fact that a number of persons respond to the pattern simultaneously and by so doing actually increase the sense of panic. The behavior of an individual member in running to an exit would not in itself cause death by crushing unless one or more members imitated this act and so complicated the movement as to bring about fatal results. The mere act of running on the part of many members

Panic and Fire Took the Lives of 104 at the K. of C. Hall Fire at St. Johns, N. F., in December of 1942. Bodies Were Piled Up at the Exits

Seventeen Persons Were Killed and Forty-Seven Were Injured, Chiefly by Panic, When This Night Club at Detroit Burned

would not cause collective suicide if none stumbled or fell or acted in a manner to impede the constant progression of the mass, but resistance of whatso-ever nature to the group movement toward freedom heightens the panic sense and soon there are those who cannot survive.

The antithesis of collective suicide is collective self sacrifice and is illustrated by the mass determination of male passengers not to take to the life boats until all of the women and children have been lowered away. Not only does this pattern of behavior result in needless sacrifice by those men whom remain aboard the ship, but most frequently leads to the needlessly heavy toll among those women and children who are sent over the side in life boats. The strength and skill requisite to handling the boat as it descends, to casting off the falls and for keeping it headed into the wind are lacking and this results in many boats being capsized on one fall or in subsequent loss.

Contrary Reactions

Of the five patterns of panic behavior, the remaining two are least frequently observed and one usually follows the other in quick succession. The first is mutual aid, and its concomitant rapacity seems never to lag more than a short interval of time. During the present emergency there have been instances of panic stricken seamen rendering mutual aid to others who had been unable to secure places in long boats or upon life rafts and continuing to take more aboard until their craft was threatened with swamping. Then followed a pattern of behavior in direct opposition engendered by panic-fear and frequently those who had been rescuers were themselves thrown from the craft.

In most instances of panic behavior there will be some individual who will lead in developing a pattern but not necessarily through any intention or by his own volition. Most frequently his involuntary cry of alarm or his initial movement toward an exit or means of escape will attract to him the attention of a sufficient number to inaugurate action. It is of course possible that he may believe he has a solution to the situation and without determining its suitability he may intentionally assume leadership.

Strangely enough those to whom we would ordinarily look for leadership under normal conditions are likely not to be leaders in a panic situation—either positively or negatively. There is no means of foretelling who will be the leader, but one accustomed to leading under non-panic conditions finds himself not likely to be so readily driven by fear to act in a panic behavior pattern and this reticence may actually be the means of saving his life. On the other hand a lack of training to cope with a panic situation developing out of a crisis will likely restrain him from assuming leadership in this new condition.

"Admirable Crichton" was based upon the phenomenon of a man ordinarily occupying a subservient position responding to panic stimulus to become an able leader, while those trained to leadership were utterly inadequate.

Generally the pattern of behavior into which a panic leader moves will be found inexpedient for the entire group, but would have been suitable for himself alone. A recent example of this occurred during the Amsterdam Hotel fire in San Francisco when a longshoreman jumped from the third floor window across a ten foot space to a telephone pole, down which he slid to safety. A woman imitating his example jumped from the window sill and fell to the street below.

Dr. Ives Hendrick, MD, said of panic behavior that "In panic, subconscious ideas will lead to acts of whose contemplation individuals would have ordinarily been incapable." This explains in a measure why the meek mannered individual, without any recognizable preparation for leadership, and lacking in emergency experience may arise to lead his companions away from panic behavior. Of course, anti-panic leadership must be inaugurated before panic interaction begins—during that moment of stunned silence while the members

(*Continued on page* 572)

Panic Contributed Its Part to the Heavy Loss of Life at the Cocoanut Grove Fire in Boston in 1942

Fire and Police of Small Town Successfully Use Radio Jointly

The Story of the Tarrytown, N. Y., F. D., Which Wouldn't Take No for an Answer

A STAFF REPORT

THE Members of Riverside Hose No 4, Tarrytown, N. Y. are celebrating an epochal event in the annals of the Village's fire department. Some measure of pleasure is shared in—albeit somewhat enviously—by the other fire companies of that historic community, on the bank of the Hudson in Westchester County. Meanwhile the village fathers are pretty well convinced that the volunteers of Riverside Hose have done everybody in the village a good turn.

What's happened is the installation of the latest in F. M. radio communication facilities on the company's "show piece" modern pumper, the first installation of its kind in Westchester County, if not in the State of New York.

And what may be interesting to the readers of this journal are the various and sometimes stumbling steps taken by the company in the process of acquiring the aforesaid radio, while maintaining harmony with the fire department, of which Riverside is only one of several companies, and the Tarrytown Police Department, with which, by virtue of its broadmindedness and the FCC regulations, the vamps must share the ether.

Tarrytown a Typical Community

First off, about Tarrytown: It is a village of about 7,500 persons, having for its mayor (recently elected) a former fire chief, William Livingston, an active fire department, which participates in the operation of Fire Chiefs' Emergency Plan. The Riverside Hose No. 4 protects, with other companies, an area of about seven square miles having property with an assessed valuation of over $18,000,000, the actual value of which is considerably in excess of this amount. Within its borders are manufacturing plants vital to the war effort. Just over the border is North Tarrytown, a thriving community also with a progressive fire department. All told there are some nine fire companies in the two communities.

Some sections of the village of Tarrytown are quite isolated and the telephone service in those districts is poor. Within the village there is a modern fire alarm signal system with street boxes. The alarms are all handled through the police department. The majority of fire alarms, however, are telephoned in to the latter, which dispatches the equipment and sends out audible notification over the fire department diaphone. It is necessary, therefore, that the fire and police departments maintain close liaison and work cooperatively.

In the past the police department, which has several radio equipped cars, located a car at the scene of the fire to enable the fire department to keep in touch with the police fire alarm headquarters and, through it, with fire headquarters, and the County Fire Control Center some eight miles away in White Plains. This was not always feasible or possible and the dependency of the fire forces upon the police was hardly fair to either. Almost invariably, the peak of communications "traffic" in the fire department occurred simultaneously with that of the police department during any appreciable fire. Nor could dependency be placed upon the telephone which was of little avail to the fire department in maintaining contact between the fire ground and headquarters, particularly when the fire occurred in the early hours of the morning, or at considerable distance from the nearest available telephone.

It doesn't matter just who first conceived the idea of the department having its own radio, but somebody did and the idea, like Topsy, grew and grew.

But very early in the "blue-print" or "wishing" stage the protagonists of radio for the department ran slap against what seemed insurmountable obstacles. First, there was the FCC ruling which limited the use of radio to emergency services, and in smaller communities, to joint operation with the police. If the latter could not be made to see eye-to-eye with the radio-hungry firemen, there was no hope for fire department radio of any kind.

Police Department Cooperative

Next, if police were cooperative-minded, there was the cost—and the fact that although there is one department in Tarrytown there are five companies, each independent of the other, with their own fire houses and all of them steeped in the company tradition peculiar to volunteer firemen. It was manifestly impossible to equip all companies, and all pieces of fire apparatus with two-way radio, much as everybody might want it. Nor could the village fathers be "sold" on the expenditure. And so, as a departmental measure, the scheme died aborning.

Riverside Hose No. 4, however, was made of stern stuff. It refused to admit defeat. It had only recently waged a gallant, and winning fight for a new pumper, and that acquisition bolstered the belief that if the department for whatever reason couldn't have radio, Riverside could.

The full story of the realization of that idea cannot be told here. But a few of the obstacles encountered and how they were overcome may be of help to other similar community fire departments or companies that have been or are being bitten by the "radio bug."

Of course the first problem was to get the consent of the community officials, and the police. It is doubtful if the former—or the latter, even seriously believed the members of Riverside when they petitioned for permission to go out and raise the money for their own radio. In what some thought were rash moments, the village-dads gave that permission, and the campaign was on. And it wasn't long before the wherewithall was raised.

Meanwhile questions and doubts continued to rise over whether or not the installation would be workable. And here is where the police came in. And, say the Riversiders, make no mistake about it, half the battle is having the police on your side.

After several conferences between Police Chief E. Martin, Police Lieutenant Harry Cramer, Fire Chief John Awer-

Riverside Hose Company No. 4 Pumper with Chief Awerdick, Mayor William Livingston and Ex-Chief and Captain James Texter

dick, the Village Board of Trustees and enthusiastic workers, like Ex-Chief and present Company Captain, James Taxter and former Commissioner William Livingston, it was finally agreed that inasmuch as the company had made good in raising the money it was only right for the Village to apply for the necessary permit from the Federal Communication Commission. This in itself was no small undertaking and before the village and the company had gone far they found themselves enmeshed in all kinds of red tape labeled "Washington."

F.C.C. Lends a Hand

The F.C.C. was cooperative, but there was a war coming on and before the petitioners could work out the details of specifications, installation, maintenance and operation, they ran head-on into still another obstacle, this one initialled "WPB." It was necessary, even if FCC gave its sanction, to get a "priority."

To almost every chief officer in the fire service this is an old story. The company was refused on its first application—not unlike so many others. But unlike others it refused to take "no" for an answer. A second application (and countless more forms filled out), this one supported with all possible evidence to give weight to the appeal, was filed. Company and village officials personally swarmed down upon New York and Washington WPB officials and emerged with an AA1 priority. The road was cleared for the final stages.

But the problem of which type of system; which manufacturer, and the task of working out the many installation and operational details, consumed more time Here again, the assistance of the police department proved priceless. The police had been all through the mill; they knew the ropes, and with their help the equipment was finally selected, ordered, installed, and the operators chosen and trained. The police also aided greatly in another detail, getting the operators' licenses. None of the fire company knew anything about operating radio-telephone or short-wave radio. None had a license. Yet with the assistance of their police co-workers this detail was completed without difficulty. Even now members of the police department are helping new operators to eliminate errors of operation and acquaint them with the mechanics of their jobs. In short, although the installation is completed, and working, there still exists the closest of cooperation between the services. As one instance, when Police Chief Martin became ill, and it became necessary to take the necessary pictures and finger prints for permits, Lieutenant Cramer of the Police Department arranged for the Department's photographer and fingerprint expert Sergeant Linson Wood, to handle this phase of the program.

Lieutenant Harry Cramer of the Tarrytown Police Department at Police Radio Station WBLN

Commenting on these difficulties, Captain Taxter says: "Much time elapsed between the period of beginning the actual installation and its completion, ready for operation because of the numerous restrictions that had to be overcome; the securing of approval of different agencies and individuals, and the procurement of licenses to operate. Knowing now what we did not know then, I have no doubt we could probably cut the time more than half for the complete job."

Why Pumper Rather Than Chief's Car?

Reviewing this installation, the question naturally arises, why was it made on a pumper of one company (from among the four in the Village) rather than on the fire chief's car?

Part of the answer has already been given; the cost of the installation was met by one company—Riverside Hose. Chiefs of department in Tarrytown change periodically, being elected from among the five fire companies. They are all volunteers and during the day are employed outside of the fire department.

Whereas the chief's car may not always be in a position to make contact with headquarters, the Riverside pumper is always at the scene with an operator. It responds to all fire calls, including those from outside areas not always covered by the chief of the department This still leaves the Riverside company and the assistant chief in touch with headquarters.

Riverside's pumper is equipped with special emergency equipment to serve as a rescue truck at fires, wrecks and other emergencies. The chief's car carries no fire fighting equipment and as the chief has no regular paid chauffeur, it may not arrive at the scene of a fire or emergency until some time after Riverside truck has gone into action. In the event

(*Continued on page 579*)

Chief John Awerdick of the Tarrytown Fire Department and Captain Jim Taxter of the Riverside Hose Company

Miami Battles Tough Oil Fire

Mutual Aid Mobilizes Municipal, Government Fire Forces to Subdue Threatening Blaze

A STAFF REPORT

IN what was described as Miami's most spectacular fire, earth-shaking explosions sent flaming oil drums streaking through the sky like robot bombs, drove scores of residents from their homes and gave firemen from Miami and other Florida communities and Naval and Army installations a tough seven hour battle, on July 1, 1945.

The blaze wiped out an oil reclaiming plant and gas storage tanks at N. W. 29th Avenue and 24th Street, on the edge of the city, causing losses variously estimated at from $200,000 to half a million. Leveled were the Franklin Oil Company's plant, which reclaimed oil for military forces, and the Sungas Company, propane gas storage plant. Two tank cars loaded with lubricating oil were destroyed as were a number of homes south of N. W. 24th Street. Firemen, working under severe handicaps, were able to save seven tanks of gasoline at the west end of the fire, each tank holding 17,500 gallons; four tanks of gasoline and one of butane to the north, and all the oil drums east of the plant belonging to the American Oil Company, Firestone, and the Southeastern Natural Gas Corporation.*

The fire is reported to have started around noon from unknown causes while V. I. Deboy, a Franklin engineer, was draining a 600-gallon tank of distillate. One report states that heat from stills used in reclaiming used oil ignited vapors from the distillate.

According to Miami's Fire Chief, Henry Chase, who directed operations, the engineer first tried unsuccessfully to extinguish the flames with a sixty-gallon foam tank, but the flames appeared to involve the entire building almost at once, driving him out with barely time for him to telephone an alarm.

When the fire reached the bottled gas plant, there were several severe explosions which tossed concrete blocks as far as two blocks. Following this, as fire spread to the estimated 5,000 filled and 3,000 empty 55-gallon oil drums, other explosions came in quick succession. One report claims there were 194 of these blasts, while another asserts that fully 500 drums exploded and took off "like robot bombs" in every direction.

One Fatality

A 14-year-old boy was fatally injured when struck by a jagged oil drumhead, sent sailing by one of these explosions. Fifteen firemen and others were treated for cuts and burns at the scene and in hospitals.

At one time it was feared that expanding liquified gas in the Southeastern Company's 45,000-gallon storage tanks might be touched off, but firemen braved the exploding drums and the heat to wet down the menaced containers

The flames at their height sent pungent, black smoke billowing fully 13,000 feet in the air, according to measurements taken by the U. S. Weather Bureau. The smoke, together with the radio announcements warning people to stay away from the area, resulted in a flood of telephone calls to fire, police and other civic agencies, and, according to some reports, increased the number of curiosity seekers, who were restrained with difficulty by police from entering the danger zone. Police said numerous automobile accidents resulted from the rush of curiosity seekers to the scene in spite of the repeated warnings to stay away.

First to go in the spread of the fire were fifteen oil storage tanks in the Franklin plant. The fire quickly worked into the stacked up storage of filled and empty 55-gallon drumheads and explosions tossed them in every direction like flaming comets. As rapidly as manpower and equipment was available, these exploding containers were followed up by men equipped with extinguishers in an effort to snuff out the fires they started in their flight.

The Sungas plant was second to be engulfed by the spreading flames, which also leaped quickly to threaten the Amoco gasoline storage tanks and dwellings in the immediate neighborhood.

Fire Department Operations

Responding to the multi-alarm calls were six pieces of apparatus of the Miami Fire Department under command of Chief Henry Chase, augmented by equipment from Hialeah, Surfside, Everglades Fire Control District, Miami Shores, Opa Locka Navy Base, Army Air Base, City of Coral Gables and the Coast Guard Fire Boat and Navy Training Station.

According to Chief Chase lack of water handicapped the fire fighters' effort. Water had to be pumped from the Miami River and firemen had to use relays on each line. One line, about 1500 feet long, was led in from a domestic hydrant. The Coast Guard fireboat supplied two effective streams and as quickly as possible placed chemical foam lines into operation, the foam being rushed to the scene by the Captain of the Port Base in response to appeals from city officials.

A crew of fifty Coast Guard fire fighters led by their Chief, John J. Gleason, who retired in 1940 as a veteran of twenty years from the New York City Fire Department, successfully kept the flames from communicating to the nearby Riverview Trailer Park and endangered dwellings.

Municipal firemen carried the fight right to the fire, disdaining personal safety in attempting to cool the tanks of

*See accompanying diagram — courtesy Chief Henry Chase.

View of Miami Fire

Flame and smoke rise from burning oil drums at the Franklin Oil Co. and Sungas Corporation during a blaze that covered nearly a square block. The fire destroyed both plants. (See also picture on front cover.)

propane, which could be seen buckling under pressure created by the expanding liquid. Had these let go, it is said, widespread destruction might have ensued.

Commenting on fire department operations, Chief Chase said: "We found that when we could get enough water we could stop the explosions of the oil drums, but there had been so much oil released from the big storage tanks that had run all over the ground, it was difficult with the number of streams we had to keep the free oil cool and to get streams large enough to get to the seat of the fire. If we had been in an area where high pressure hydrants were available, the whole story would have been different."

Homes Near Plant Endangered

Early in the fire it was apparent the firemen would have a difficult fight to prevent extension of the fire into the dwellings which almost entirely surrounded the plants and storage yards. Residents of houses most exposed to the fire spread were first to evacuate premises, some without waiting to remove their belongings.

In midafternoon, City Manager A. B. Curry sent out a call to William Sidlow, Public Service Director, for all available city and private trucks to aid in evacuating residents within a three-block radius of the flaming, exploding sector. Sgt. Ray Brock of the Miami Police Department recruited about fifty sailors to aid in moving household effects from threatened residences. These and other volunteer workers carried piles of furniture and personal property for several blocks.

Other emergency forces were mobilized to meet the emergency. A mobile canteen, sent to the scene by the Dade County Chapter, American Red Cross, fed approximately 500 firemen and volunteers.

Trainmen on the Seaboard Railroad, and members of public utility services worked through the afternoon and night. One railroad section crew attempted to save their section car by lifting it from the rails but had to abandon it when fast leaping flames forced them to flee to safety. Linemen worked within range of exploding drums and radiated heat to cut off power lines. Railroad crews aided in moving cars from the danger zone.

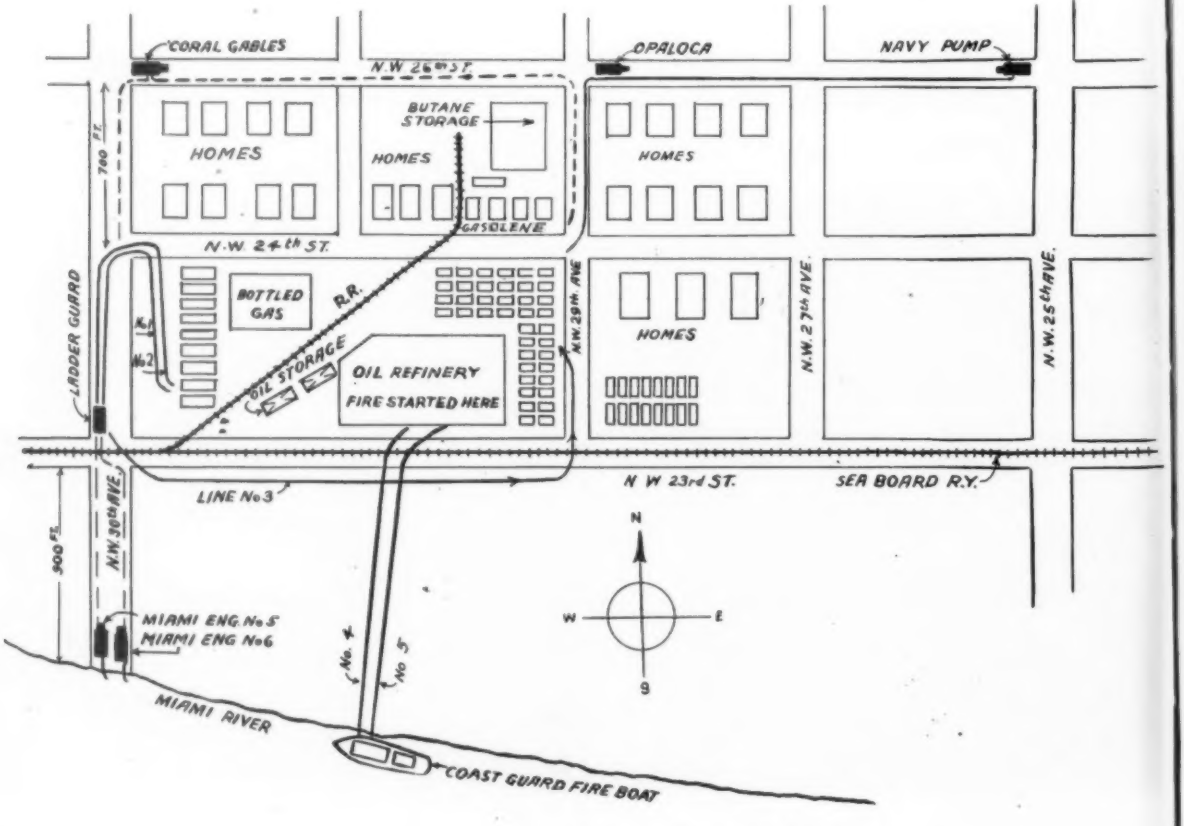
Legal Technicalities Ignored

Rule books were tossed aside to save homes of hundreds of families menaced by the fire. The fire area is just outside Miami City limits in the triangle bounded by N. W. 20th Street, 27th Avenue, 36th Street and the Seaboard Railroad right-of-way. Being an unincorporated territory, residents of the area normally would have to rely on the limited fire fighting equipment operated by the county government. Miami city officials in May wanted to extend the city limits to take in this area but the move was blocked by the owners of property there.

City Manager A. B. Curry said that he first learned about the fire when the telephone at his home began ringing with calls from families in the area "frantically pleading for more fire equipment."

Legal technicalities were forgotten or ignored in the all-out response of the fire fighting forces of Miami and other municipalities and military authorities. "Humanitarian considerations prevailed," Curry said. He remarked that the problem of protecting this and other adjacent areas often has been discussed at meetings of city mangers. "In some states insurance against injury or death of firemen is void outside the city limits," he said, "but of course we carry our own insurance." He praised the fearlessness of city firemen, who worked right up against huge overhead tanks of liquefied gas, playing water on them to keep them cool.

The military was also quick to respond. Soon after the sounding of the first alarm, rolling and aquatic equipment was rushed to the scene and Coast Guardsmen, Sailors and Army men fought the flames and explosions, assisted in evacuating residents from the area, and maintaining order, for several hours. The Coast Guard fireboat, utilizing chemical foam equipment, operated from the Miami Canal. Equipment was also dispatched by the Naval Training Center Miami Naval Air Station and other military establishments, including the Army Air Base. A working party of eighty-five sailors was sent from the Navy Receiving Barracks; liberty was also cancelled for Coast Guardsmen who were rounded up on Miami Streets and at the baseball park. Temporary reserve personnel also was pressed into service to make up the estimated 150 Coast Guardsmen taking part. Many other servicemen volunteered for duty.



Plan of Fire Area and Surroundings at Miami, Fla.

This fire in a number of respects followed the pattern of other fires in oil plants and storage yards. Perhaps the most important lesson taught is the hazard of locating such plants and yards adjacent to built-up residential or other occupied areas. The next is the need of adequate fire protection within the plants and yards, and the political subdivisions in which plants and yards are located. That this protection should include ample water supplies should be obvious. Further, there should be an abundance of specialized equipment and materials to fight the type of fire peculiar to storage of volatile oils and explosive gases.

This fire should serve as a lesson, also, to all property owners and residents of "border-line" and suburban areas who have in the past refrained from installing adequate local fire protective and prevention measures and who have counted upon, and are at present relying upon, their "humanitarian neighbors."

ONE MATCH CAN DO IT— WHEN CONDITIONS ARE RIGHT

Demonstrations Prove Cleaning Solvent to Be Hazardous When Applied to Shavings

By Captain John Jordan*

THE production of important war material was interrupted, May 5, when a half million dollar fire partially destroyed a Columbus, Ohio, war plant. The fire was started, according to Fire Chief Edward P. Welch, when an employe attempted to light a cigarette, and the lighted match head fell into shavings that were on the floor to absorb cleaning solvent.

The plant did not have an organized fire brigade, and the untrained employes spread the fire over a larger area while attempting to extinguish it. During the excitement, everyone neglected to call the fire department. The first alarm was received from an excited employe, who said "There's a fire at the 'Blank Co.', send everything you've got. The nearest fire company was located 3.1 miles from the fire, but arrived at the fire grounds in a few seconds less than five minutes after the first alarm was received. *The fire had gained such headway that the first responding company turned in a "Third Alarm" by radio before they had traveled half the distance to the fire.* The main buildings were fully involved, and it is estimated that there was delay of as much as twenty-five minutes in turning in the first alarm.

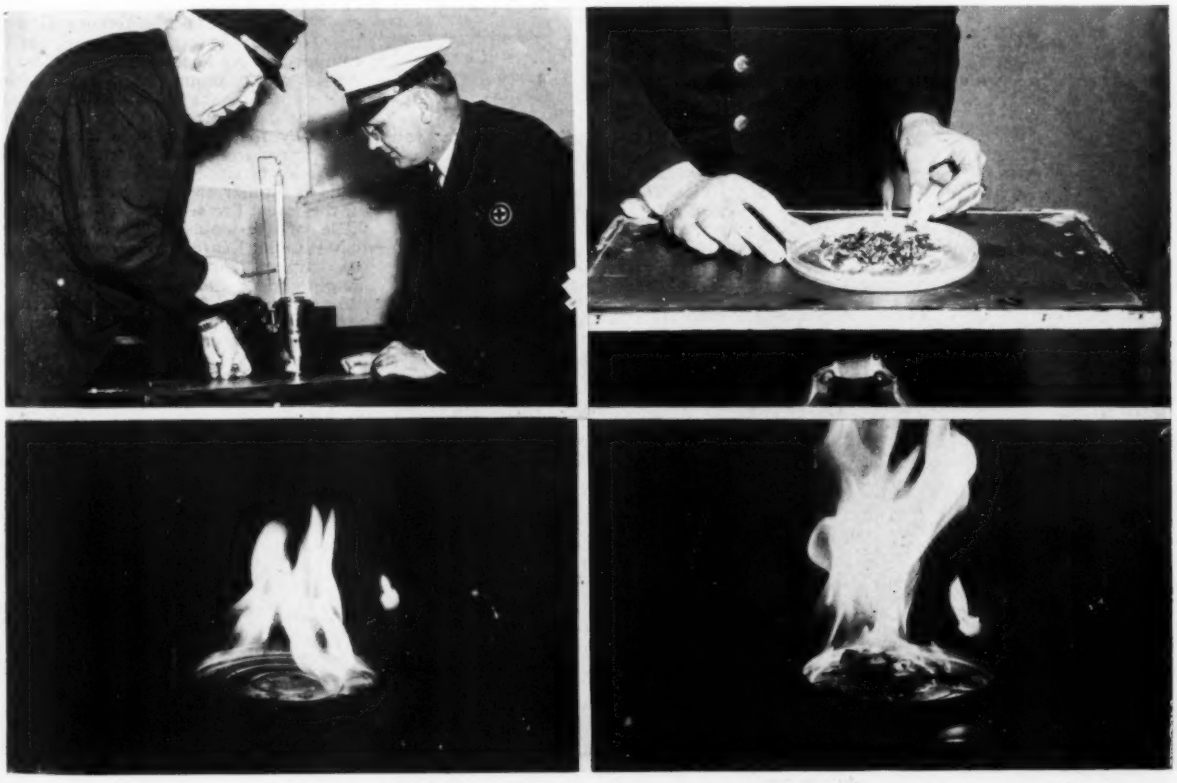
The fast spread of the fire nearly trapped several employes, and mystified company and fire department officials, causing Chief Welch to order a complete investigation. Captain John Jordan, Head of the Fire Prevention Bureau, found that the fire originated in a department which cleaned metal parts, using a regular standard solvent as the cleaning agent. There were five such cleaning operations in operation at the time, which caused an accumulation of solvent on the floor. Shavings were placed on the floor to absorb the excessive accumulation.

The first suspicion was that employes had substituted gasoline or thinner for the solvent, but a check of company records disproved this theory. The solvent was checked in an open cup tester, and found to flash at approximately 105 Far., being practically impossible to ignite with an ordinary match.

Ten lighted matches were dropped separately on a pile of dry shavings. Eight failed to ignite the shavings. Two ignited them, but the fires failed to burn.

(*Continued on page* 634)

*Chief, Fire Prevention Bureau, Columbus, Ohio.



Upper Left: Captain John Jordan (Left) and Batt. Chief Elmer Brophy Check the Flash Point of Cleaning Solvent. Upper Right: Shavings, Ignited by a Candle, Burn Slowly in Test Pan. Lower Left: Solvent Burns Slowly After Being Slightly Heated, and Ignited by Candle. Lower Right: Solvent and Shavings Are Mixed and Ignited. They Quickly Burst Into a Fast Burning Fire.

A Yankee Soldier Views the Fire Service of England

By ARTHUR H. SELLECK

WHEN we think of the fire service in another country, particularly one as far away as England, we unconsciously think that there must be a tremendous difference in the way we here in the States work and the ways and means of our English cousins. To be sure there have been some very excellent lecturers and representatives of the British Fire Service touring the country, along with many training films that have come from England. Nevertheless, the thought enters your mind, they can't be like us! These were my beliefs until the circumstances of this war found me in London, the largest city in the world. I soon began to wonder exactly what made the London Fire Brigade or the National Fire Service, as it is now known, tick.

To start off, my first concern was just how they would receive a Yank in their stations and, worse than that, an inquisitive one. However, I was received royally.

Additional Ranks

First of all, in their system of officers they have a few more ranks than we have. Starting at the bottom is the fireman, common even to us. Next is the leading fireman and the section leader, of which we have no comparable rank. The company officer and senior company officer are next in line and these correspond to our lieutenant and captain. Next is the column officer, or our battalion chief. Then the divisional officer, or our deputy chief.

Going up into the higher ranks we next have the assistant fire force commander. This office is divided into two parts, one chief handling the administration work; the other, operational. They are somewhat analogous to our assistant chiefs of department. The top man of the city force would be the fire force commander, akin to our chief of department. Beyond this there are three more offices but these deal with the regions and are filled by regional commanders. This is where the nationalization comes in. They are chief regional fire officer, deputy chief of fire staff, and chief of fire staff. The American fire service doesn't go this high unless you would consider them on a par with our commissioners. Finally, I might add the present system of officers is a major change brought about by the transition to the National Fire Force. These ranks were not as numerous nor the same in the old "brigade."

Their station house life and daily work details vary so little from ours that with very little imagination you could picture yourself in any engine company in San Francisco or New York.

They work two twenty-four-hour days on and one off. Of course, such a heavy working schedule is easily explained when you consider the business they have had to handle.

The day starts with the familiar roll call, only they call it "parade." There is no watch duty on the floor, as all the control and watch duty in handled by the women's division. The stations are never referred to as "engine houses" but as "fire stations." And there are "appliances" in the fire stations—not "apparatus." Their appliances are broken down into the following categories: the pump, which is our pumper or engine; a pump escape, which is the pump equipped with a 50-foot extension ladder, operation of wihch we will discuss later; then the turntable ladder, corresponding to our aerial truck. These trucks are not tractor trailer affairs; the average ladder here being 101 feet in length. They have nothing comparable to our city service trucks.

Those are their basic appliances. As for a few of their special appliances, they have the rescue tender tantamount to our rescue squad; the salvage tender, not unlike our salvage squad or corps. Before the war the insurances operated the salvage branch, but they have fallen in line with the N. F. S.

Many Small Appliances

There are ever so many other special appliances that you will find in the States, for instance: the smoke ejector unit; searchlight company; foam tender, etc. One important difference is that they do not have any wagon that is equipped to lay hose as we do. Hose is carried on the pumps in 50 and 100-foot rolls stowed in the sides of the wagons. For the large fires that were brought about by the blitz, a hose laying lorry was introduced that carried upwards of a mile of single jacket, unlined hose. This is similar to the rigs that we use in the forest fire service. They use very little of the double jacket hose, only what Lend Lease has brought. They do employ a considerable amount of single jacket rubber lined and double jacket unlined hose. The pipe, or nozzle as we know it, is called the "branch" here. Their branches are unlike ours in that they have very few that are hand controlled or equipped with a shut-off on the pipe. The familiar booster tank is present, only under the name of "first aid" and actually that is what it is. When we say "the bells hit," they say "the bells go down." "We're rollin'" —another one of our phrases, takes the form of "the lot goes."

The alarm system is the familiar Gamewell, and of course, they use the telephone. We use in our larger cities the Gamewell Manual, where the alarm goes as far as fire alarm office and then is redispatched. They use the Gamewell Automatic, which sends the signal directly to the nearest station, as well as to the fire alarm office. The fire alarm headquarters then sees that supporting appliances due at the box are sent. There is no second, third, or greater alarms here; calls for additional help are handled like our special calls. For instance, if the regular assignment at a box is four pumps and a turntable ladder (aerial), and the fire is going to warrant more help, the senior officer orders "to make pumps ten, and lad-

Drill Yard at London Fire Headquarters, Showing "Turntable Ladders" Being Operated

ders three." This means that "fire alarm" will send him six more pumps and two more ladders, or a total of ten and three respectively. When the fire is under control, where we in some cities send in a "recall," they send back a "stop signal." When the "stop" is sent they inform fire alarm exactly what they have and their immediate progress.

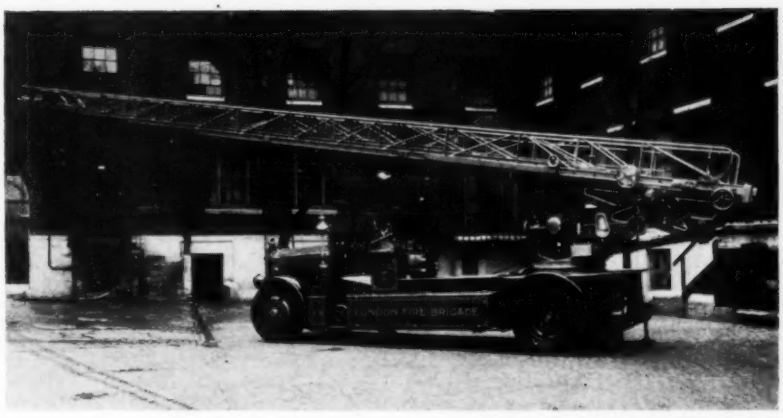
All this wasn't clarified in my mind until I was invited to spend time as a London fireman. For three days and nights I lived with our English cousins.

To start the day off, I had to be included in the parade, as there is an accurate check kept of all personnel in the station. Various work details for the day appeared and I was given a little schooling in their equipment and procedure, for if and when the bells went down my status as a guest ceased and started as a fireman. The wait wasn't very long, as the lot soon turned out to a malicious (false). My tour of duty was in the time that the pilotless planes were plaguing Southern England. Before long the warning went off and soon I found myself at a typical incident. There was a fire but it was soon under control and we fell to in helping the light and heavy rescue boys with their work. My first night brought a few small incidental peacetime fires but early in the morning we turned out to a box and found a large tailor shop well alight in a high value district. The turntable ladder immediately came into play, as the structure was a five-story brick building, with a slate roof. First pumps in were busy and were pumping from hydrants, which are all flush-type over here.

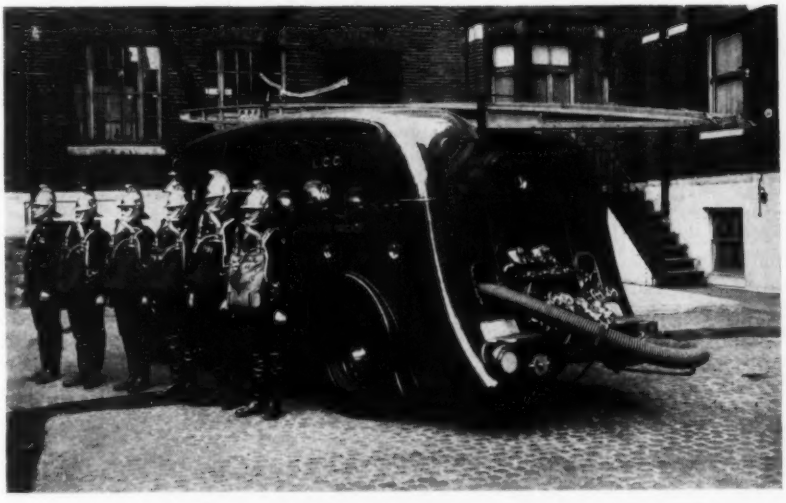
The progress of the blaze soon made it evident that more help was necessary as the fire had broken out of the back of the ground floor and was going up the outside to the second floor. The column officer in charge sent back to "make pump six;" with three in attendance, that doubled his lot. As soon as they had vented the job and it broke through to the open, they were quick to pounce on it and lick the job. My observation at the fire showed me little difference in their manner of attack. Events progressed quite rapidly for here were men who, through four hard years, had learned to make every moment count. In these past years there were many fires equally as bad. One quick look around the town tells of the fires they had.

Types of Pumps

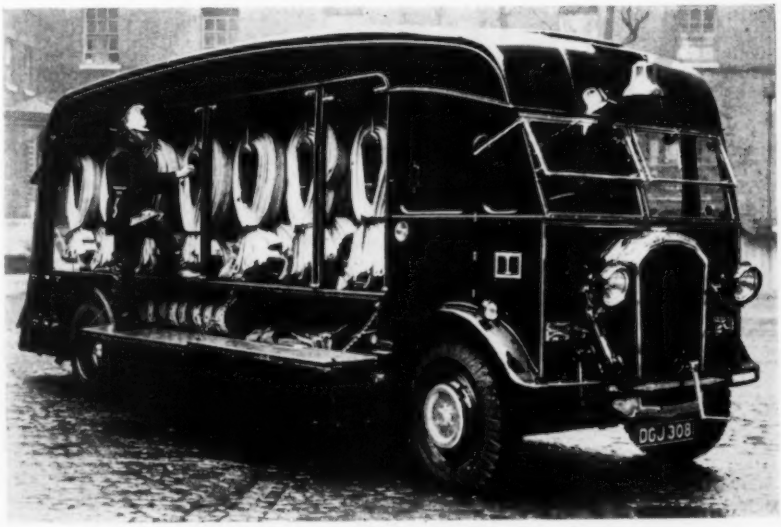
Now for a further breakdown of the appliances: I speak of the peacetime appliances more than the wartime ones. There are two predominating types of pumps, both with similar characteristics. These are the Leyland and the Dennis. Both of these are 900 GPM and have 35 H. P. engines. The pump itself is a Rees-Retubo rotary. The wagon is further equipped with two hose reels of ⅝-inch hose and a first aid, or booster, tank as we term them, of 45 gallons. They carry from 800 feet to 1,000 feet of 3-inch hose but not in the manner that we do. Theirs is carried is unconnected 100-foot lengths stowed in compartments along the side. This is possible, because of their use of single jacket rubber lined hose. On the top is carried a 40-foot ladder, known to them as the "Ajax" and comparable to our 35-foot extension, so ofttimes used. On the newer vehicles the crew ride inside.



Morris-Magirus Turntable Ladder in Service in London Fire Brigade



Sedan Type Pumper. Note Placement of Extension Ladder in Recess in Roof



Hose Lorry, Developed During the War. It Carries Over a Mile of Hose

The next truck is the pump escape, which differs very little—with one or two exceptions—from the pump. This carries a 50 or 55-foot detachable escape ladder, which is mounted on two large wheels about five feet in diameter. In position of the wagon, it rides on top of the roof with the wheels hanging suspended from the ground at the rear. The ladder is in two or more sections, and is raised by a hand winch. This wagon and rig might compare with our city service truck, as it is often dispatched where we would send a ladder truck. Detached from the wagon, it is easily and quickly rolled into place and is quite maneuverable. It might be thought of as a miniature aerial, all in itself. Some of the brethren who are now in the armed forces in England and have seen this, have thought it to be an antiquated affair, but I have seen a rescue effected in a matter of seconds after its arrival on a scene.

The Aerial Truck

The last piece to be discussed is the turntable (aerial) ladder. There are two makes of these: the Merryweather and the Leyland, and they average about 101 feet in length. The most noticeable thing about them is the absence of the tractor-trailer type—even those that are 15 feet. The turntable and operating gear are in the rear of the truck, instead of the front as with ours. They are the safest and simplest ladder I have ever seen. They are raised and lowered by a worm screw and not by hydraulic or spring tension cylinders as are ours. This worm screw is powered by a secondary drive shaft off the motor and is thrown into operation similar to a pump. If there is motor trouble or failure, all movements are hand controlled. One main difference between the Merryweather and the Leyland is that the Merryweather's turntable turns with the ladder and in the Leyland, the ladder rotates but not the turntable.

As with us they have a deluge gun at the top which can be used as a water tower. When a fireman has to stand for any length of time at the tip of the ladder, he swings a small platform into place, thus saving wear and tear on his arches. There is telephone communication between the top and bottom of the ladder. The safety features are a "self plumbing" device that causes a red light and bell to come up should the ladder become overloaded or get out of plumb. There is one other ladder that is worth mentioning—the Leyland-Metz, a German made ladder on an English chassis. Prior to the war, all servicing of this type had to be done by a mechanic from Germany. The feature of this ladder is that if, when raising or lowering it during its operation it comes in contact with any obstruction, the ladder and all mechanisms stop, until the obstruction is removed. Otherwise it is the same as the other types. Nearly all of these English ladders are equipped with pumps as well. They carry no other ladders beyond the "big stick" itself. This completes a thumbnail sketch of the appliances commonly found "over here."

Demonstration at Drill Tower of London Fire Brigade Headquarters. Note Portable Escapes in Use at Tower

Panic in Public Assembly

(*Continued from page* 564)

group for a response. A moment later the minds are stultified by fear past response to normal demands for attention. True anti-panic leadership is rare and exists only in those individuals who through past performance and preparation either do not feel panic stricken or who, feeling fear, are able to rise above it and dominate the situation.

Actually, anti-panic leaders achieve a degree of regimental behavior which permits the leader to determine upon a course of action and put into effect his solution of the problem confronting the group. It may be that he will determine the true problem is not to find a means of leaving the scene and thus adjusting away from the crisis, but will elect to solve the problem of bringing calm and rational consciousness to the members. He does this by means of the spoken word or gestures or a combination of both. For example the actor, or the band leader or spectator who takes the stage may raise his hand, blow a whistle or shout and the result can be the same—silent attention for the instant he requires to assume leadership.

Regimental behavior is limited by two principal factors, viz., the scope of training or preparation to which the membership has been subjected and the limits imposed by physical limitations. Military personnel, school children and average adult citizens, in that order, would respond to commands of a military order, while, on the other hand the best trained Marines could not respond to a command to execute figure skating evolutions. Thus the leader who attempts to cope with a panic situation will be handicapped by the preparation of the immediate group. The limits imposed by available exits, the number of life boats, the type of fire escapes and similar physical handicaps will also prove factors requiring consideration.

Training Needed

Probably the best single instance of need for and lack of regimental training as a measure to counteract potential panic behavior is found in the public schools of America today. While many schools have a pseudo "fire-drill," the majority lack a comprehensive *fire exit program* so carefully thought out that each contingency is anticipated to the degree that children are educated in possible emergencies which may block stairways, render hallways unsafe or cause changes of exit route during an exit drill. Where real preparation is made for combating panic behavior, children will have been taught why running, talking and confusion of any kind cause injury and death and they will not only obey the predetermined leader, but should an occasion arise when the normal leaders are out of place then the behavior will not be of a panic order.

Protection of School Children

If the schools in your city or district have not been fully prepared to avert panic you have your work cut out for you because this is a primary responsibility of the fire fighting profession in co-operation with our public school officials. If the theatres in your community give performances without having a uniformed fireman present who is trained in coping with potential panic conditions you have a probably tragic fire waiting to occur. And finally, for your own safety, when you enter a theatre or other place of public assembly, examine the nearest exit door to your seat and see if the panic hardware really functions or if the door is locked so it cannot be used. Try to decide what means of exit you will use in case of a crisis and then in the event it should develop you can *walk*, not run to the nearest exit.

Ass't. Chief E. A. Beadle Returns

Former Assistant Chief Edw. A. Beadle of the Union City, N. J., Fire Department, has returned to his old job after a stretch of two and a half years in the Army. He received his discharge from the Army on June 16, 1945.

He served as Fire Marshal of 300 AAF Base Unit, Tampa, Fla., from March 2, 1943, to March 15, 1945, after which he was assigned to Dale Mabry Field, Tallahassee, Fla., Office of the Post Engineer, as Assistant Fire Marshal, being in charge of Fire Prevention and Extinguishment at Dale Mabry Field and eight sub bases.

OKLAHOMA CITY AIRCRAFT PLANT HAS WELL TRAINED FIRE FORCE

No Fire Loss Experienced Since Department Was Perfected; Many Honors Won

THE Douglas Aircraft Company, Inc., Oklahoma City Plant, located twelve miles from Oklahoma City proper, builds the famous C-47 Skytrains which have played such a major part in this great world conflict.

We feel we have an industrial fire department that is doing just as good a job in fire prevention as the workers are doing in building our C-47's. There are few fire departments that carry on as continuous a training program as we do in the Fire Department at the Oklahoma City Plant.

Comprehensive Training Course

Eighty-six subjects are included in the course of training which is conducted by the Fire Chief, Fire Captains and firemen. Each fireman prepares his own paper and imparts his subject to the class. However, each paper is checked before it is presented to the class. The firemen are paid time and one-half on overtime to attend these classes and have attended 100 percent.

After we finish the subjects in the classroom which consist of twenty 2-hour sessions, we hold ten drill sessions of 2 hours each on the drill grounds and at the burning pit. The burning pit is twenty-five feet wide and thirty feet long. We would unload from ten to fifteen barrels of old oil into the pit and top off with from five to ten barrels of waste thinner and dirty 100 octane gasoline which makes quite a fire. We use both high- and low-pressure fog nozzles, Hardie high pressure and various types of 1½-inch and 2½-inch low pressure, some with applicators and some without. We also use mechanical foam through all lines, both high and low pressure, and it works fine. We might add that in the center of the burning pit we have a heavy steel cage approximately three feet square which we fill with magnesium solids and trimmings, which cause plenty of flashbacks. The firemen are trained to cut an opening through the center of the flames for the rescue men to go through in order to rescue the dummy. We also train the pump operators in the care and operation of their trucks and pumps, laying three lines into one, two into one, and three straight 2½-inch lines.

We have three fire stations and have some type of schooling at each station on every shift. We have two 750-GPM trucks, one Class 125 crash truck, one tank truck with 800 gallons of water with a 250-GPM pump and two 1½-inch lines, 200 feet each, with fog nozzles.

Our department consists of a Chief, a secretary, four assistant chiefs and forty-six firemen. We work three 8-hour shifts each day. There is an assistant in charge of each shift, and one assistant relieves the shift assistants and the Chief. We have approximately one hundred fifty auxfliary firemen. Herewith is a picture of the firemen and one of the officers. The officers, reading from left to right, are: J. G. Swirczynski, in charge of the third shift, is 52 years of age and has had 29 years of fire service; E. J. McClure, in charge of the second shift, is 42 years of age and has had 23 years of fire service; S. L. Ehl, relief assistant, is 36 years of age and has had 11 years of fire service; A. V. Tucker, in charge of the first shift, is 36 years of age and has had 9 years of fire service; G. E. Zimmerman, Chief, is 49 years of age and has had 21 years of fire service. All assistants are members of the Southwestern and International Association of Fire Chiefs. The Chief has been a member since 1927. He helped organize the Southern California Fire Chiefs Club and served as president and secretary-treasurer of the club. He also served as chairman of the Board of Directors of the Pacific Coast Association. Sixteen of the men are retired firemen with more than twenty years experience, and several have had from five to ten years fire department experience. Most of the men have been here since construction of the plant was commenced three years ago. Our turnover is very small.

Chief Zimmerman and Assistant Chief

Officers of the Douglas Aircraft Company Fire Department: (Left to Right) J. G. Swirczynski, in Charge of Third Shift; E. J. McClure, in Charge of Second Shift; S. L. Ehl, Relief Assistant; A. V. Tucker, in Charge of First Shift, and Chief G. E. Zimmerman

Personnel and Apparatus of Douglas Aircraft Company Fire Department

McClure attended a ninety-six-hour school in crash fire fighting at Major Army Air Field, Greenville, Texas, in December, 1943. This school was conducted by the Eighth Service Command of Dallas, Texas, under the direction of Major George Houston. Chief Zimmerman attended the Kansas Fire College at Wichita in 1943, and has attended the F. D. I. C. at Memphis for the last three years.

We won the National Security Award for the years 1943 and 1944. Also, the Departmental "E" Award for sixteen straight months. Our fire loss to date has been nil. We maintain a strict fire prevention program with continuous inspection on every shift, such as is done in the progressive municipal department.

Our discipline over Fire Department personnel is very strict. While on duty all firemen are required to be in uniform, cleaned and pressed, shoes shined and clean shaved.

DISASTER THREATENS HALIFAX WHEN MUNITIONS DEPOT BURNS

Over Ten Thousand Endangered Residents Evacuated to Safety from Fire and Explosions in Halifax, N. S., Area

BLASTS that recalled the 1917 disaster in Halifax Harbor, when an ammunition ship exploded, killing 1,635 persons and injuring thousands, were set off by a fire raging through the Royal Canadian Navy Magazine Depot at nearby Dartmouth July 18-19.

First reports attributed the explosions to a fire which, starting on a barge while it was being unloaded got out of control and set off hundreds of tons of explosives. It was disclosed that all available fire fighting equipment in the area had been called into action and as the flames menaced the main magazine, fire boats were rushed to the scene. These were later withdrawn when it was determined that the blaze was uncontrollable. Firemen, it is said, were unable to approach close enough to the main blaze to do effective work in controlling the spread of fire, which was speeded by explosions which sent pillars of fire 150 feet skyward, sprayed rockets and flares over the Bedford Basin area, and strewed wreckage and broken glass over Halifax and Dartmouth. Buildings miles away were shaken. Throughout the night the fire roared out of control, with an accompaniment of rhythmic thuds of explosions.

Casualties Light

From early reports the casualties were small—one known dead, one person missing and thirteen injured, but naval officials report that no one in the immediate vicinity of the first terrific explosion could have survived, and a final checkup may increase the number of casualties. No figures are available on the number working in the magazine at the time.

Following the first of the major detonations, which occurred at 6:35 P. M. (5:35 P. M. EWT), evacuation of persons from the danger zone began. Communications were interrupted between the small towns of Tuft's Cove, and Bedford, while men, women and children headed for safer areas. For a time the St. Margaret's Bay Road, leading out of Halifax, was lined with automobiles moving bumper to bumper, jammed with people in their flight. Over 10,000 persons are reported to have fled the danger zone.

Until after midnight, blasts of varying intensity continued to rock the area of the naval depot. In the wake of each explosion, projectiles were hurled through the air and into Bedford Basin. Snowflake rockets, used for illuminating targets during the war at sea, flowered over the scene with weird brilliance. Virtually every store window in Halifax and Dartmouth was believed smashed. Initial blasts were felt in cities five to ten miles away but the major explosions were reported felt as far as 27 miles distant.

Halifax was plunged into darkness by a terrific detonation at about 3:00 A.M., which cut off all power. Building lights were restored soon after, but street lights remained off. Some fire communications lines were reported damaged, but mobilization of emergency and first aid forces was accomplished without material delay. Military police, air raid wardens, mounted and civilian police cooperated in blocking off roads into the danger areas soon after the initial explosion. Actual reports of the operations of the fire service, which has long possessed plans for coping with such disasters, are not available at this writing. Witnesses reported, however, that there were no signs of panic anywhere in the blast zone.

No estimates of the property damage have thus far been released.

A Million-Dollar Arson Fire

A 45-year old handyman confessed to setting a fire in Mahanoy City, Pennsylvania, on May 30, which burned out two business and residential blocks with a loss of $1,000,000 and was only subdued by the combined efforts of five volunteer fire companies of Mahanoy City, manning 12 pieces of equipment, and firemen from Frackville, Tamaqua, Shenandoah, Girardville, Gilberton, Gordon and Ashland.

The handyman, Joseph M. Giblin, confessed to Police Chief A. P. McLaughlin of Mahanoy City that while intoxicated he removed oily cotton waste from the journal of a railroad car and stuffed it under a garage door in the rear of a paint and wallpaper shop where the fire was discovered about 3:15 A.M. by a policeman on tour. A high wind fanned the flames, which swept across roofs and into windows, destroying 50 buildings and making homeless over 25 families residing above the business places. Included in the structures burned was the community's largest department store, a 13-family apartment house, a shoe store and more than 30 garages and warehouses.

Thirty-five firemen received minor injuries; Fire Chief Wasal Govera fell 15 feet when flames burned through a ladder, but remained on duty. A Shenandoah fireman was hospitalized when struck by a falling timber.

Firemen pumped water from the subterranean Mahanoy creek, running under the city's Market Street. A burst water main handicapped firemen.

The Mahanoy City Red Cross unit, and state disaster agencies were called upon to aid, following the three hour fire, described as the worst in the history of Schuykill County.

Fire Guard Makes a Record

(*Continued from page 557*)

danger of smoking acute when sailor lads return from shore leave a little "blotto" from an evening spent in some Broadway hot spot or Tenth Avenue grog shop.

The New York Fire Department was so gravely concerned with the situation that Rescue Co. 1 was assigned on first alarm to certain pier and waterfront boxes along the North River Terminal area because Rescue 1 carries self contained oxygen masks. Ordinarily Rescue 1 does not tap that territory on first alarm. The precautions taken by the Fire Department paid dividends in contributions to the war effort. Now the U. S. Army fire guard is on its own when the big ships are in with their many thousands of debarking military personnel. The Army fire guard has been sufficiently trained and experienced for the New York Department to agree to the request of the Army to withdraw the special detail.

Anaesthetist Held Responsible

According to one of our European correspondents, an anaesthetist has been held liable for injury to a patient in an Australian hospital on the ground that an anaesthetic which took fire while an operation was in progress was under his control.

The only means of heat in the operating theatre was an electric radiator with the heating element exposed to the air, the wires becoming red hot when the current was turned on.

Both surgeon and anaesthetist were familiar with the theatre and with the method of heating; the radiator was in the corner of the theatre about six feet from the operating table. The theatre sister "used to turn the radiator off and on as she thought fit."

An explosive mixture of ether and air had been produced, which became ignited and burned the hand of the plaintiff (patient) as she lay on the operating table. Despite the dangerous form of heating, the action of the theatre sister (operating room attendant), and the presence of administrative officials, no action was taken against the hospital. Damages were claimed against the two medical men.

It was established that, as the operation was about to be performed, an unidentified person had knocked the bottle of ether on the floor.

PIER FIRE INVOLVES STEAMER; RESULTING LOSS, $2,000,000

Conditions favor rescue work in fire that also consumes 1,000-foot pier

A Staff Report

WHAT might easily have been one of the nation's worst inland marine tragedies occurred July 17 when fire swept the cruise ship Hamonic, docked at Sarnia, Ont., forcing 350 passengers and crew members to scramble over her sides to safety. The list of injured in falls, sliding down ropes or suffering from burns or immersion exceeded 150.

The flames razed 1,000 feet of the two-story Canadian National Railway storage sheds and destroyed twelve loaded and twenty-one empty freight cars, as well as gutting the 5,265 ton, 360 foot liner, one of the largest Great Lakes passenger-freight ships operated by the Canada Steamship Lines.

The Hamonic was enroute to Duluth, Minn., from Windsor, Ont., and Detroit and docked to take on cargo at Point Edward, with 220 passengers and 130 crew members aboard, and eighty to eighty-five more passengers scheduled to board her at Sarnia.

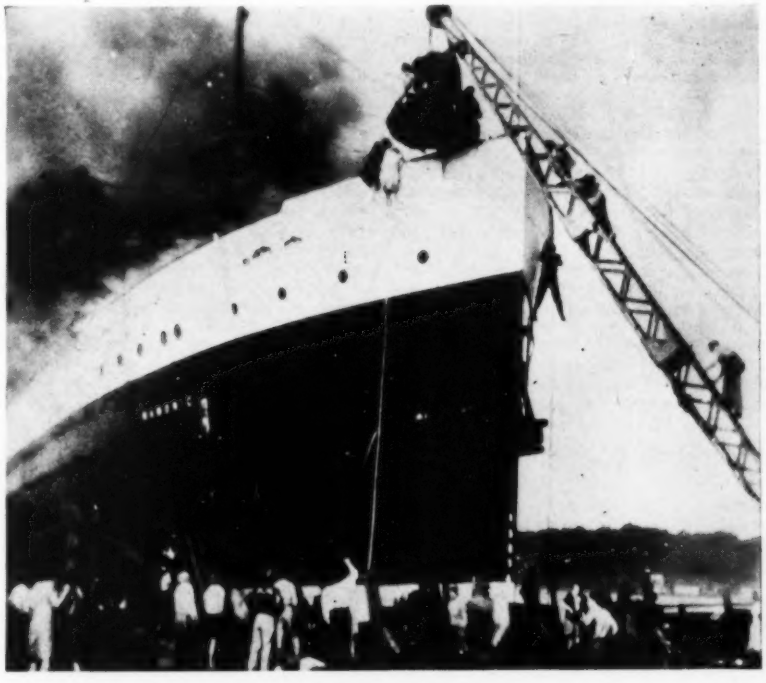
Shortly after docking at Point Edwards, and while loading operations were under way, an explosion occurred in a gasoline engine on the dock. Flames spread rapidly, shooting to the roof of the sheds and thence leaping to the Hamonic's upper deck.

Captain Horace Beaton, captain of the ship, ordered mooring lines severed and the ship backed downstream about 100 yards. Staying on the bridge with smoke and flames all around him, Captain Beaton rammed the Hamonic into the river bank. The ship's whistle sounded a fire alarm and her crew directed passengers to remain aboard until the craft was beached. It is said that by the time the vacationists were driven by flames and smoke to jump overboard or slide down ropes and cables, the Hamonic was close to shore. Accounts state that perhaps 100 persons on the boat were taken off by the operator of a big crane with a clam-bucket shovel. He swung the crane's boom up to the bow of the ship, where some passengers crawled down the boom while others clung to the shovel and were lowered to the ground.

Some instances of panic were reported but passengers generally had praise for the ship's officers and crew, as well as for the other aiding forces which assisted in the rescue work.

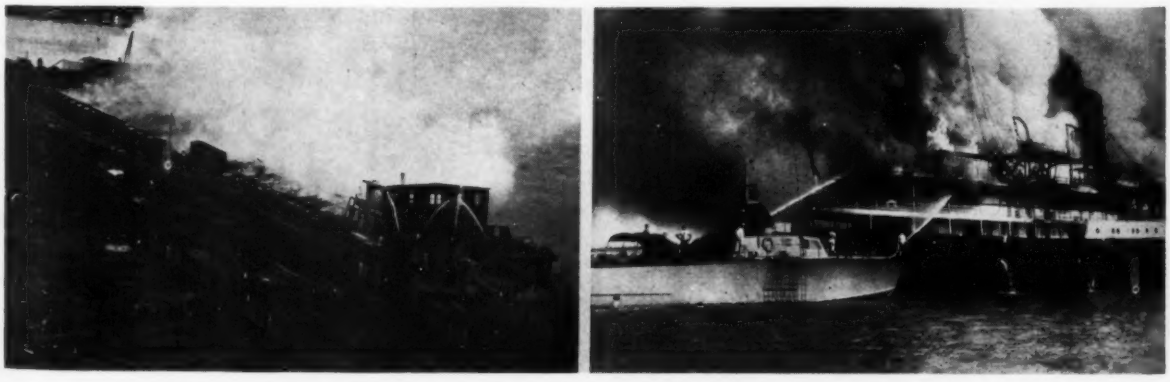
While onlookers lined both the Michigan and Ontario shores, motor boats, row boats, canoes—and almost every kind of small craft, including Coast Guard fireboats, put out from both shores, and in a matter of minutes a flotilla was churning about the stricken ship, darting in as flames permitted to take off full boatloads of panicky passengers, mostly women, many with babies or young children in their arms. Other craft circled to pull victims out of the water. It was estimated that 250 persons were taken out of the river.

Fire-fighting efforts on the part of the fire departments were directed largely at controlling the land fire, which consumed the pier and freight cars. Coast Guard fireboats were forced to fight the ship blaze from the water side, being unable to operate aboard the Hamonic itself until the hull was practically burned out. The total loss has been estimated at $2,000,000.



Passengers Escape from Burning Ship

Two women attempt to leave the bow of the burning S.S. Hamonic by a rope lowered to the dockside as others climb on the clam-shell bucket swung by the boom (right), down which some passengers are escaping. Man also attempts to lower himself over port side of ship.



Left: The 1000-Foot Pier Shed Was Completely Demolished by Fire. This Fire Ignited the S.S. Hamonic, Which Was Gutted. Right: Army Crat Operates Streams on the Blazing Aft Superstructure of the S.S. Hamonic as She Burns.

NOVEL DEVELOPMENTS IMPROVE WORK OF COAST GUARD FIREBOATS

Extension Shank for Monitor Pipe Increases Stream Range; Distributor Protects Craft

A NOZZLE extension which has added to the effective range of Cleveland's Coast Guard fireboats has been designed by Lieutenant (j.g.) F. E. Munley, former captain in the Lakewood, Ohio, fire department.

At present, the extension is being studied at Coast Guard Headquarters in Washington for possible use on a nation-wide scale.

Ths extension enables a fireboat to discharge 2,500 gallons of water per minute to a height of more than 200 feet. It is particularly valuable in combating fires which might occur in vital war plants and port installations along the waterfront.

Effective on High Fires

Adjacent to Cleveland's Detroit-Superior High Level Bridge over which thousands of war workers are transported by bus, streetcar and auto, are many establishments, such as milling concerns, where a fire might send flames raging hundreds of feet into the air. In these cases, radiant heat would add to the menace caused by heat carried by convection.

The deluge of water from the improved stream would effectively fight the fire and have a cooling effect on the entire span.

No Serious Losses Experienced

Due to the presence of the Coast Guard's especially designed fireboats and other Coast Guard port security measures, no serious fires have broken out along the river since the Coast Guard was assigned the job of waterfront protection in 1941.

Lt. Munley, assigned to this job by Captain G. W. Cairnes, District Coast Guard Engineer, found the trouble lay in the four-inch monitor nozzle, standard equipment on the larger boat. It failed to throw a high enough stream. He advised a nozzle extension that increased the range, quality and effectiveness of the stream.

Throws a 150-Foot Stream

"A 20-inch extension, 4½ inches, inside diameter," states Lt. Munley, "was designed to fit between the two sections of the nozzle. The first section, six inches in diameter at the base, tapers to five inches. There I fastened my extension. The third section then is attached. It tapers from five inches to a four-inch tip. Fitted togther, the nozzle will throw a 150-foot stream—about 50 feet higher than without the extension."

"A three-inch tip throws the water more than 200 feet—but with a smaller discharge."

Distributor for Ship Fires

Another improvement added to the boats by Lt. Munley is a Bresnan distributor nozzle, normally used to fight cellar and ships' holds fires. This water-propelled, rotating, multiple nozzle is attached to the bow of the boat.

Working in close to the fire, the distributor throws water in all directions, protecting the boat and crew from heat and flames.

Cleveland's fire department abandoned its fireboats twelve years ago. But the Coast Guard is now giving adequate fire protection to the waterfront, insuring that the vital supplies that are manufactured, processed and funneled through the port of Cleveland, reach their destination on the fighting fronts of this global war.

U. S. Coast Guard Photo

New Nozzle Extension Enables Fireboat to Throw Stream 200 Feet Vertically.

Using a nozzle extension, devised by Coast Guard Lieutenant (j.g.) F. E. Munley, this fireboat now can shoot streams more than 200 feet vertically, thus giving protection to Cleveland's Detroit-Superior High Level Bridge shown in picture.

U. S. Coast Guard Photo

Nozzle on Bow Protects Fireboat and Crew

With a "Bresnan" nozzle attached to its bow, this Coast Guard fireboat and crew at Cleveland, O., are protected from heat and flames when working in near a waterfront fire.

U. S. Coast Guard Photo

Closeup View of New Fireboat Nozzle Extension.

Circled in the above photo is the new nozzle extension devised by Coast Guard Lieutenant (j.g) F. E. Munley. Using the extension, Coast Guard fireboats now can protgct Cleveland's vital traffic artery, the Detroit-Superior High Level Bridge from fire should one break out in any of the several milling establishments located nearby

N. B. F. U. AWARDED CITATION FOR SERVICE RENDERED U. S. ARMY

Presentation Made to Wilbur E. Mallalieu by Lt. General Eugene Reybold, Chief of Engineers

THE National Board of Fire Underwriters has received from the War Department at Washington an engrossed citation of appreciation for fire prevention services rendered to the Army by the Board in the past five years. The citation was presented to W. E. Mallalieu, general manager of the Board, by Lt. General Eugene Reybold, Chief of Engineers, before a distinguished group of high ranking officers of the Corps of Engineers with which the National Board of Fire Underwriters is most closely associated. Held in the studios of Station WMAL, at Washington, July 7, 1945, the entire ceremony was broadcast over a nationwide hookup on the Blue network of the American Broadcasting Company.

Citation by Secretary of War

The citation is signed by Secretary of War Henry L. Stimson, Under Secretary of War Robert P. Patterson, General George C. Marshall, Chief of Staff, General Brehon B. Somervell, Commanding General, Army Service Forces, Lt. General Eugene Reybold, Chief of Engineers, Brig. General John S. Bragdon, Director, Military Construction, Office of the Chief of Engineers, Col. S. M. Weaver, Chief, Repairs and Utilities Division, Office of the Chief of Engineers, and Major Lamar C. Sledge, Chief, Fire Prevention Branch, Office of the Chief of Engineers. It reads as follows:

WAR DEPARTMENT

To All Persons Who Shall See These Presents, GREETING:

Be It Known That

WHEREAS, In May, 1940, under the proclamation of limited national emergency by the President of the United States, and in recognition of the vital importance of Fire Protection in such emergency

THE NATIONAL BOARD OF FIRE UNDERWRITERS

tendered its services and facilities to the National Government; and,

WHEREAS, This Office accepted the offer of the National Board of Fire Underwriters in September, 1940, whereby the Advisory Bureau on Fire Protection was established and is maintained in the War Department without cost to the Government; and,

WHEREAS, The full facilities of The National Board of Fire Underwriters, and through that organization, the facilities of the insurance inspection organizations throughout the country have made available the technical services of a highly qualified and well-coordinated corps of engineers, providing a service that could not be secured elsewhere; and,

WHEREAS, The fulfilment of the responsilibity of the Commanding General, Army Service Forces, for fire prevention and protection executed through the Office, Chief of Engineers, both during construction and following activation of military establishments, would have been extremely difficult, if not impossible, without the expert assistance of THE NATIONAL BOARD OF FIRE UNDERWRITERS: Now, therefore, be it

RESOLVED, That this commendation is awarded for outstanding services rendered to the War Department in the furtherance of the War program.

Aid Rendered in First World War

Cooperation of the National Board of Fire Underwriters with the Army began in the first World War when the Board set up an organization in the Construction Division. At the beginning of the present war, the Board again offered its services and for the past five years three of its engineers, including Lewis A. Vincent, Assistant to the General Manager, have been attached to the Office of the Chief of Engineers in a full-time advistory capacity. K. J. Carl and J. A. Quinn, both fire prevention engineers, are the present assistants. They work in close cooperation with Major Lamar C. Sledge, Chief of the Fire Prevention Branch, Major Louis S. Green, Captain John B. Allen, W. W. Dean, principal fire prevention engineer and A. H. Gent, associate fire prevention engineer, all in this Branch. Major Sledge was formerly in the Atlanta, Ga., office of Chubb and Son of New York City.

115 Engineers Serve

In addition to the three engineers stationed at Washington, The National Board of Fire Underwriters has 112 men in the field, all skilled fire prevention engineers, who act in a consultant capacity to District and Division Engineers, Service Command Headquarters, and commanding officers of various Ordnance, Chemical Warfare, Air Forces, Navy and Coast Guard installations. This is the largest organization of fire prevention engineers in the world.

Large Army Fire Force

The Engineers have in the Army about 20,000 fire fighters and about 2,000 pieces of fire-fighting equipment. In addition they have a fire prevention organization consisting of 115 personnel in the field and 37 in Washington. The small size of this organization is made possible by the cooperation of the Board of Fire Underwriters and its affiliated organizations which have at their disposal files of priceless information gathered over a period of years, all of which are at the disposal of the Engineers.

Photo by U. S. Army Signal Corps

National Board Honored by War Department

Lt. General Eugene Reybold, Chief of Engineers, United States Army, presenting War Department Citation "For Outstanding Services Rendered to the War Department in the Furtherance of the War Program" to W. E. Mallalieu, General Manager of the National Board, who accepted the citation for five years' service to the government in behalf of the National Board of Fire Underwriters and insurance boards and bureaus. Reading from left to right those present are: W. W. Dean, Principal Fire Prevention Engineer, Office, Chief of Engineers; A. J. Carl, Advisory Fire Protection Engineer, National Board of Fire Underwriters; J. A. Quinn, Advisory Fire Protection Engineer, National Board of Fire Underwriters; L. A. Vincent, Advisory Fire Protection Engineer, National Board of Fire Underwriters; W. E. Mallalieu, General Manager, National Board of Fire Underwriters; Lt. Col. W. Z. Bancroft, Executive Officer, Office, Director of Military Construction, Office, Chief of Engineers; Major Lamar C. Sledge, Chief of the Fire Prevention Branch, Office, Chief of Engineers; Lt. Gen. Eugene Reybold, Chief of Engineers, United States Army; Brig. Gen. J. S. Bragdon, Director, Military Construction, Office, Chief of Engineers, and Col. S. M. Weaver, Chief, Repairs and Utilities Division, Office, Chief of Engineers.

Reasons Firemen Lose Law Suits

By LEO T. PARKER
Attorney-at-Law, Cincinnati, Ohio

IT is well recognized that the majority of litigations in which firemen become involved may be decided in their favor if they acquire elementary principles of the modern law. Obviously, municipal firemen cannot obtain knowledge of all branches of legal procedure, but it is easy to realize that acquiring sufficient legal knowledge to successfully win a majority of controversies is not difficult.

One dependable method of eliminating expensive legal controveries is: Become familiar with modern higher court decisions involving municipal firemen. Also, clip the pages and file the herein reported cases under proper headings so that favorable opinions are readily obtainable to assist in defending suits when the occasions demand.

Since the outcome of a majority of litigations in which municipal firemen become involved is dependent upon interpretation of state or city laws we shall in this article review late 1944 higher court decisions which illustrate the importance of elementary legal knowledge pertaining to state and city laws.

Retirement Litigations

Modern courts hold that if a municipal firemen is *legally* retired and accepts pension payments he cannot later complain and recover back salary for the period of his retirement. This assertion is based upon state laws which specify the legal status of municipal firemen.

For instance, in City of Muncie v. Horlacher, 53 N. E. (2d) 631, reported April, 1944, a man named Edgar brought suit against a city for damages for the alleged breach of his legal contract of employment as a fireman. However, the testimony proved that the fireman had been placed on the pension fund and he accepted pension checks without protest for more than a year. Therefore, since state laws specified the authority of the trustees, the higher court held that he was not entitled to recover back wages as a fireman in active service.

On the other hand, see Malloy v. City of Chicago, 1938, 369 Ill. 97, 15 N. E. (2d) 861. The testimony proved that at the time a fireman was retired there was no ordinance of the city authorizing such retirement and no valid law permitting such retirement. Under these circumstances the higher court held that the fireman was "illegally" retired and, therefore, entitled to recover back wages for the period he was retired.

On the other hand, although a member of a municipal fire department is illegally discharged, yet if he considers his discharge as being legal he cannot be reinstated by officials authorized by state laws to do so.

See Dowling, Prosecuting Attorney v. City of Highland Park, 14 N. W. (2d) 53, reported June, 1944, where the testimony showed that a state law authorizes a city fire commission to discharge municipal firemen for just cause. However, the state law does not authorize the commission to reinstate firemen but gives this authority to the Civil Service Commission.

A fire department captain, who had been convicted of a conspiracy to murder a person, was discharged by the fire commission. Later his conviction of a conspiracy to murder was reversed and the charge of conspiracy dismissed. Notwithstanding this the higher court held that the captain was legally discharged by the fire commission and that such commission did not have power to reinstate him. He did not appeal from his discharge to the Civil Service Commission, which had exclusive authority to grant reinstatement. Moreover, the fact that the captain for over five years did not question the legality of his discharge, resulted in the court holding that he could not be reinstated by the Civil Service Commission.

This court said:

"Howard's (captain's) failure for a period of more than five years to question the legality of his discharge by the fire commission must be construed as an acquiescence in his discharge and an abandonment of his claimed right to a position in the fire department."

Also, see Jones v. Doonan, 265 Mich. 384, 251 N. W. 571, 572, where a municipal employe who was discharged for cause failed to question the legality of his discharge for nearly three years. In affirming the trial court's judgment denying his petition for reinstatement, the court said.

"Unreasonable delay in asserting claim to the office results in abandonment of it and waiver of the right of trial."

So, therefore, modern courts will not always follow to the letter provisions of state laws. In the above cases the state laws clearly authorize a specified commission to reinstate municipal employes who are illegally discharged. However, these courts held that firemen who accept a discharge as being legal and delay an unreasonable period for demanding reinstatement forfeit all rights to rely upon state laws which authorized reinstatements. In other words, the courts imply the full extent and legal effect of state laws.

Delay Is Fatal

The State Legislature may prescribe the terms and conditions of pensions and retirement allowances, place the burden of paying them on cities and towns, and pass valid retroactive statutes with reference to pensions and retirement payments.

Firemen who delay an unreasonable period of time in objecting to the provisions of such laws automatically become within their provisions and are obligated to abide by such laws.

For illustration, in Ford v. Cahill, 53 N. E. (2d) 81, reported April, 1944, it was shown prior to July 1, 1937, certain men were reserve firemen. Between June 5, 1938, and February 11, 1940, they were permanent members of the fire department. They were entitled to the benefits of persions and retirement allowances provided for firemen at the time they became members of the permanent force. However, according to the state laws, they had the right to waive and renounce such benefits when they enrolled in the municipal retirement system, and they did not take advantage of this privilege of the law.

They filed suit in 1943 and proved that when they became members of the permanent force the secretary and the chairman of the retirement board threatened to withhold their compensation and to strike their names from the payroll unless they joined the municipal system, and permitted deductions for the retirement fund to be made from their weekly compensation.

In the suit filed in 1943 they asked the court to restrain the city treasurer and the retirement board from deducting from their salaries further sums which are placed in the retirement fund, and to order the board to reimburse them for the deductions already paid into this fund. The higher court refused to hold in favor of the firemen, and said:

"If the plaintiffs (firemen) were victims of coercion, then it was their duty to act seasonably as soon as they were freed of constraint and refuse to permit further deductions from their pay. The subsequent conduct of one who seeks to set aside a transaction voidable on account of fraud or duress bars him from relief if such conduct amounts to a waiver or affirmance of the transaction."

Implications of Law

Modern higher courts consistently hold that a state statue which affects one class of citizens who are distinguished from others outside the class by an intrinsic, natural, and reasonable ground for distinction is a "general" and not "special" law. Thus the court will imply that a state law which does not clearly designate a "class" is a general law applicable to all who are within its provisions.

For example, in Styring v. City of Santa Ana, 147 Pac. (2d) 689, reported May, 1944, it was shown that a state law requires cities, fire districts, etc., having regularly organized and paid fire departments to grant regular or permanent members leaves of absence from active duty of not less than 15 days in each year and four working shifts in every month of service.

The legal question arose over the answer to this question: Is this state law valid and applicable to firemen in unchartered as well as chartered cities? In holding in the affirmative the higher court said that a law of this nature is not unconstitutional as being "special legislation," but is "general legislation" applicable to a municipal fireman and, therefore, valid.

This same rule of "implication of law" is effective with respect to state or city

laws which generally authorize increases of salaries to municipal firemen.

For instance, in Rock v. City of Pittsfield, 55 N. E. (2d) 606, reported July, 1944, it was disclosed that a city ordinance was enacted which increased salaries of firemen beginning the following January 1, 1943. For the first few months of 1943 the city paid only the salaries which were in effect before the ordinance was passed because the city counsel had made no provision for appropriating the money. Certain firemen filed suit to compel the city to pay the salaries specified by the new ordinance. In holding the city liable the higher court said:

"We think that the ordinance was valid, and that the salary increase took effect on January 1, 1943. It then became the duty of the mayor to provide in the budget for payment of the salaries as increased by the ordinance. The duty to provide for the increased salaries arises upon general principles. . . . Since the salaries were validly increased, the plaintiffs are entitled to recover the unpaid balances of the increased salaries, and the fact that the city has failed to make the necessary appropriation therefor constitutes no defense."

Therefore, this higher court clearly implied that when a city council increases salaries of municipal firemen, it is the legal duty of proper officials, as the Mayor, to provide the necessary funds for paying the legal salaries.

On the other hand, unreasonable delay of municipal firemen in filing demands for payment of legal salaries may result in the court holding in favor of the city.

For example, in People ex rel. Griffin et al. v. City of Chicago et al., 48 N. E. (2d) 329 reported June, it was shown that members of the fire department of a city sought to compel the mayor, the comptroller, the fire commissioner and the city treasurer to certify and issue proper vouchers and checks for the difference between the amounts paid them during the years 1932 to 1936, inclusive, and the sums which were established in the appropriation ordinances for these years. However, since this suit was not filed until 1936 the higher court refused to hold in favor of the firemen, and said that their delay in filing the suit was fatal to them.

Must Prove Facts

In all litigations involving death of a fireman the testimony must indicate that the death resulted from injuries sustained within the scope of the employment. Otherwise the deceased fireman's dependents cannot recover compensation under the State Workmen's Compensation Act.

For example, in Robitaille's Case, 34 Atl. (2d) 473, reported January, 1944, it was shown that an auxiliary member of a municipal fire department, while in the performance of his duty at a fire, received burns of first and second degree about his head, hands and arms. Sixteen days later he died suddenly from what an autopsy disclosed to be a coronary thrombosis. The deceased fireman's widow sued to recover compensation, under the State Workmen's Compensation Act, for death of her husband.

There was evidence that, while the burns were painful, he was not overcome at the time when they were received, and that of his own accord he walked into the doctor's office for treatment and that he steeadily improved, so far as his injuries were apparent, up to the time of his death. The widow failed to prove that the accident caused the death of her husband. Therefore, the higher court refused to allow compensation.

Damages Plus Compensation

Modern higher courts hold that a fireman who is injured as a result of negligence of a citizen may recover damages from the latter and, also, compensation under the State Workmen's Compensation Act, or other law which provides compensation to firemen. Moreover, the amount of the normal damages allowance is not subject to reduction although the fireman receives such compensation.

For illustration, in Mullins v. Bolinger, 55 N. E. (2d) 381, reported July, 1944, it was shown that a fireman was riding on the back end of a fire truck answering a fire alarm when it collided with a passenger car driven by a man named Ray. The fireman sued Ray for damages and proved that the accident resulted from the latter's negligence. The lower court allowed the fireman $3,500 damages. Ray appealed to the higher court and proved that the city had paid the expenses necessary for medical, nursing and hospital care of the fireman. Ray contended that the damage judgment should be reduced in consideration of the value of these services and expenses paid by the city. However, the higher court refused to agree with this contention and, in upholding the $3,500 damage allowance, said that by way of insurance, gratuity of others, a sum received by an injured fireman or under state statutes, or expenses for medical, nursing and hospital care cannot be shown in mitigation of damages for the injury in a suit against a third person for damages.

Small Town Radio

(*Continued from page 566*)

of an error in transmitting alarms either by dispatcher or because of incorrect information given fire alarm headquarters, it is possible to send correct information to the company which, if not already at the scene, can be stopped en route and re-directed so that at least one fully equipped piece of apparatus will get to the proper location.

Once located at the scene, the commanding officer on the fire ground can maintain constant touch with fire alarm headquarters through the radio-telephone operator stationed at the truck. In the case of simultaneous fires or other emergencies, the chief or an assistant can direct operations with the aid of a police radio car.

Tarrytown, although eminently satisfied with the Riverside pumper installation is not resting content with this single unit. Nor will it be happy until the chief's car, and all other pieces of apparatus are equipped with radio-telephone.

Specifications

For those who might be interested in the details of the equipment and installation here are the specifications:

Make—Motorola*
Model—F.M.T.R. 25
Serial—F.M.T. 12976
Serial—F.M.R. 12125

*Manufactured by Galvin Manufacturing Co., Chicago, Ill.

Police Radio Station Call Letters (used by fire department) WBLN.

Frequency, 35,500 K.C.

Riverside Hose is known as Engine 4, Tarrytown, Fire Department and Engine 80 in the Westchester County mutual aid program (Fire Chief's Emergency Plan).

Radio-telephone operators all hold 3rd Class Restricted Radio Operator's License. The operators at present are the chief and two assistants; company captain and two lieutenants, and the company drivers.

Equipment is serviced by the New York Motorola Company, which also services the entire Police Radio system. The cost of maintenance of the Riverside installation is covered in the fire department budget.

Total cost of the installation was $515.00, of which it is reported $440.00 was for equipment.

Photo by Max O. Lee

Michigan Chief Officers Meet

At the annual joint meeting of Detroit Fire Dept. Officers' Club and Southeastern Michigan Fire Chiefs Assn. in Detroit (left to right): Capt. Hugh R. Martin, Rescue Co. No. 2, D.F.D., vice-president and Chairman, Entertainment D.F.D. Officers' Club; Chief Norman Pritchard, Ferndale, Mich. F.D. President, Southeastern Michigan Fire Chiefs Assn.; Chief John L. Rourke, D.F.D.; Harold Krieger, Marine Engineer, fireboat John M. Kendall, D.F.D.; Pres. D.F.D. Officers' Club, who presided at the meeting. Other speakers were Pres. Arthur W. Winter, Board of Fire Commissioners, D.F.D. and Capt. Loren G. Farrell, Supervisor of the Hazardous Materials and Chemical Laboratory, D.F.D.

TOPEKA FIRE STATION AN EXAMPLE OF ECONOMY WITH PRACTICALITY

Case History of Station No. 1 Based Upon Material Supplied By Chief W. J. Cawker

TOPEKA, Kansas, city of 67,833 population in the last census, inaugurated a building program for its fire department in 1935. The last one of four new fire stations was completed in 1940. The story of this station—No. 1—may well serve as a pattern for other fire departments which have, or will have, post-war construction programs.

Like many other municipalities, Topeka found that the progress in housing its fire forces had not kept pace with the training and equipping of the department's personnel. In a world, too many of its fire houses were architecturally and economically unfitted for a modern fire department.

The original Station No. 1 was a large two-story brick structure, 55 x 85, erected in the days of horse-drawn apparatus, and was much larger than the type of building required to house the present-day type of equipment and fire company personnel. After the passing of the horses and the introduction of motorized apparatus the building was found much too large for the housing of a one-engine company; the unnecessary floor space required unwarranted and wasteful amounts of fuel in order to maintain comfortable temperatures during the winter months. Furthermore, it was costly to maintain the old structure and achitecturally, it looked its age.

New Station Built

After study of the possibility of rehabilitating the old structure compared with erecting a new house, it was decided to replace the structure with a more modern type of building. A buyer was found for the old building and site and the disposal price ($13,325.00) proved almost enough to cover the cost of the new site and construction.

The total cost of the new station, including land, and furnishings was $14,844.94. Every effort was made to utilize old material and furnishings that were believed suitable for the new house. Thus, ceiling fixtures from the old City Building were installed, with a saving of $117.00. So, too, was the battery charger from the old station, value of which was $50.00. Additional savings through reclamation of old building materials are listed below.

Construction of Station No. 1 was begun the first week of August, 1940, and the company moved into its new quarters the first day of November of that year.

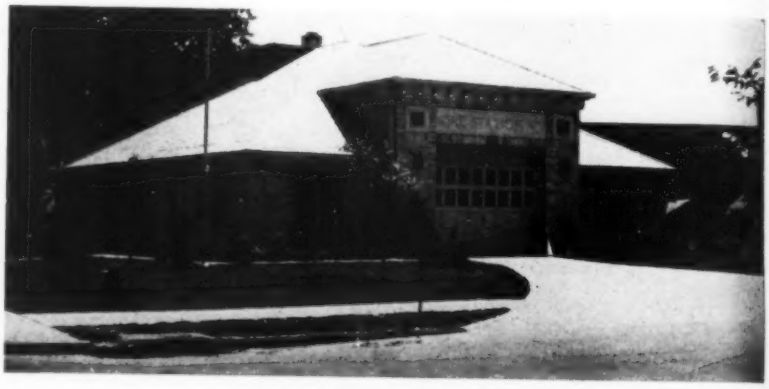
It is interesting to review the costs and the specifications of this station. Undoubtedly these costs would not apply today, and they hardly provide a fair basis for estimating post-war costs but they are interesting if for no other reason than to provide a check list of the different items that enter into a fire station building program.

Cost Data Station No. 1

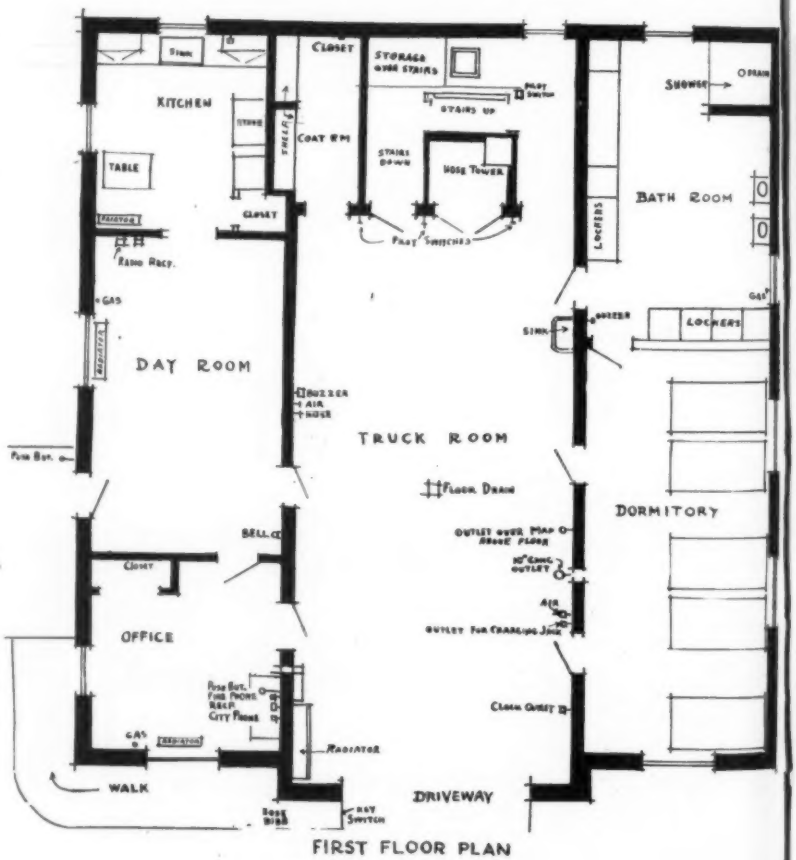
Building site, plot 170x225 ft...	$1,500.00
Architects' Fees and Supervision	645.53
Driveway paving	175.77
Construction Company	11,496.53

Material from old City Building, which was demolished in 1940 and from which the following was obtained:

35,000 brick	122.50
640 cu. ft. of rock	32.00
6,483 ft. dimension lumber	194.49
Cleaning brick	80.15
Abstract and Recording Fees	33.40
Advertising for Bids	23.62
Gasoline tank and pump	65.45
New sidewalk constructed on two sides of site	141.60
Additional radiation in truck room	15.00
Toilet	27.00
Electrical fixtures	60.50
New breakfast-set table and four chairs	14.15
Library table	29.75
Gas range	50.00
Air compressor	99.50
Carpenter's vise	6.00
Murphy recessed bed	32.00



Topeka's New Fire Station



Floor Plan of the Fire Station

CONDUCTIVITY OF FIRE STREAMS ON 11,000-VOLT WIRES

Tests Run at New Haven Give Some Interesting Data

By H. F. Brown*

IN order to determine the conductivity of water streams used in fire fighting when in the vicinity of high voltage wires, such as are used in the electrified territory of the N. Y. N. H. & H. R.R., tests were conducted during July, 1945, at the New Haven Fire Department Proving Grounds on Water Street, New Haven, in cooperation with Chief P. P. Heinz of the New Haven Fire Dept., and his staff. Some of these tests were demonstrated before several hundred fire chiefs, engineers and others interested in the subject, on July 18, 1945.

The set-up used in making these tests is illustrated in the attached diagram. A wire mesh approximately 6 ft. x 4 ft. was supported at a height of 18 ft. above the ground, by insulated span wires between two wood poles. These wires and the screen were connected to one terminal of a 5 KW, 25 cycle (2 KW at 60 cycles) step-up transformer which stepped up the local 110 volt service to approximately 12,000 volts above the ground, the other terminal of the transformer being grounded. When the 110 volt service to the transformer was closed, a green indicating lamp was lighted. A 100 to 1 potential transformer was connected to the high tension cross-span wires, which operated a voltmeter, indicating the potential on the screen. Fresh water and salt water streams at various pressures, nozzle diameters, and nozzle types, were directed upon the energized screen from a carriage which allowed of varying the distance between the nozzle and the screen. A very sensitive combination voltmeter-milliammeter (Westinghouse PM-32) was connected to the nozzle by a heavily insulated flexible wire, and the other terminal of this instrument was grounded.

A very sensitive relay which would operate on approximately 6 milliamperes was also connected to this wire running to the hose nozzle and to the ground; and through an auxiliary relay, this relay caused a bell to ring and a red light to light whenever enough current flowed down the stream to the nozzle to cause it to operate.

Prior to the day of the public demonstration a number of preliminary tests were made as follows:

With fresh water streams, 1¼" nozzle and 60 lbs. pressure at the nozzle

No voltage or current whatever could be detected when the nozzle was 30 ft. from the screen energized at 12,500 volts.

At 27 ft. slight intermittent kicks could be detected on the meter, which could not be evaluated in volts or milliamperes, but could be felt as a slight tingle.

At 25 ft. an average of 10 volts and 150 milliamperes could be detected. This also could be felt as a shock—unpleasant, but not considered hazardous.

At 8 ft. an average of 300 volts was registered. The miliampere current reading was off the scale. This was considered hazardous.

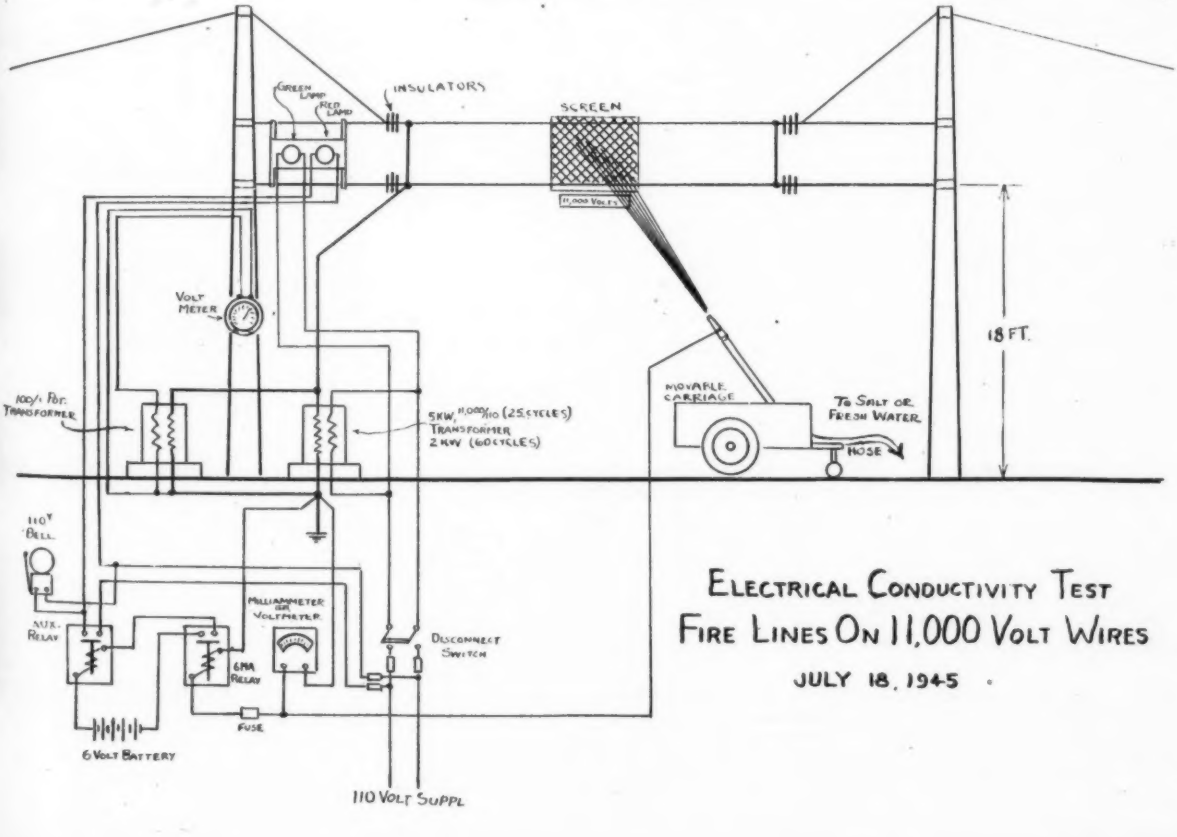
When a fog nozzle was substituted for the stream at 8 ft. distance, no reading at all could be detected.

With Salt Water

The first tests made with salt water were with two lengths of hose between the fire boat and the nozzle—about 100 ft. A solid stream of water from a 1¼" nozzle at 45 lbs. pressure was used at a distance of about 15 ft. No readings could be made on the instrument connected to the nozzle, but the current flow down the stream was sufficient to blow a 20 ampere fuse in the 110 volt input side, and also pulled the voltage on the screen down to around 5,000 or 6,000 volts. This was due to the fact that the solid stream of salt water in the 100 ft. of hose between the nozzle and the harbor water effectively grounded the nozzle, regardless of the fact that the open stream was highly conductive, and no readings could be made of voltage on the nozzle with such a short length of hose supply line.

The 20 amp. fuse was replaced by a 30 amp. fuse which was about the

*Asst. Electrical Engineer, New York, New Haven & Hartford Railroad.



ELECTRICAL CONDUCTIVITY TEST
FIRE LINES ON 11,000 VOLT WIRES
JULY 18, 1945

Layout of Equipment for Testing Conductivity of Fire Streams. Stream Is Shown Striking the Electrically Charged Screen

maximum current which would flow in the low tension winding with the high tension winding practically short circuited by the salt water stream. This amount of current (30 amps.) in the supply circuit caused a decided drop in the supply voltage, so that the high voltage was not more than 6,000 to 8,000 volts.

At 40 ft. distance, with 1¼" nozzle at 50 lbs. pressure, no dips could be detected in the high tension voltmeter. With fog nozzle and 70 lbs. pressure at 12 ft. no leakage was indicated, but the salt spray quickly caused the line insulators to arc over.

Charged Hose Served as "Ground"

On July 18th, at the public demonstration, the tests tabulated in Table I, attached, were made. A 500 ft. section of hose was inserted between the fire boat and the nozzle to obtain definite potentials on the nozzle. The instrument readings on Test A are not quantitative as to the amount of current flowing in the stream because of leakage through the 500 ft. hose to ground.

Summary

In general these tests agree with the data published by the National Board of Fire Underwriters—but while these tests were made to establish minimum safe distances, i.e., where the feed back would not be hazardous for a number of voltages, the object of these tests was to find the minimum distances from overhead 11,000 volt traction wires at which *no perceptible current or voltage* could be detected.

It would seem from these tests that with *fresh water streams* this distance is 30 ft. and with salt water streams this distance is 40 ft., with pressures normally used.

With fog nozzles a distance of 10 ft. should be perfectly safe with fresh water, and 15 ft. with salt water.

It is hoped to continue these studies in the near future with smaller nozzles, and also with salt water on the grid with a larger transformer capacity.

Connecticut Fire College Held

The Fourth Annual Connecticut Fire College, conducted by the Connecticut Fire Department Drillmasters' Association, in cooperation with the Public Service Training Bureau of the Connecticut State Department of Education and the Fire Chiefs' Club of Connecticut, was held at Wesleyan University, Middletown, Conn., June 4 to 7 inc.

Coston C. Crouse, State Department of Education, presided. The lecturers were Richard Howes, Supervisor Trade and Industrial Education, State Department of Education; Chief John S. Pachl, State Department of Education; Chief Roi B. Woolley, Assistant Editor, Fire Engineering; Chief Allen Judson; Pres., Connecticut Fire Chiefs' Club; Warren Y. Kimball, National Fire Protection Association; Deputy Chief Henry Thomas, Fire Marshal, Hartford, Conn.; Arthur Rutherford, Building Supervisor, West Hartford, Conn.; John Nichols, Supervisor, Buildings and Plans, State Department of Education; William Armstrong, National Board of Fire Underwriters; Roger Russell, Factory Insurance Assn., Hartford, Conn.; John De Mino, E. C. Goodwin Technical School, New Britain, Conn.; Chief George Graham, Bristol, Fire Department; Deputy Chief John O'Loughlin, West Hartford, Fire Department; Chief T. H. Donnelly, West Hartford Fire Department; Paul Collier, Director, Bureau of Youth Services, State Department of Education; Ex-Asst. Chief Frank Spain, New Haven; Deputy Chief Hargraves, Brooklyn; Chief Hutchinson, Sumsburn, Deputy Chief Hall, Niantic; Asst. Chief Wood, Branford; Chief Thomas Furey, Thompsonville; Chief Raymond Spencer, Hamden; Chief Paul Maurice, Baltic; Chief James Grote, Chester. Also, Milton C. Stocking and Alonzo G. Grace, State Department of Education; Mr. Allen, Special Agent, National Board of Fire Underwriters; Professor Ralph Bischoff and Mr. Davis of Wesleyan University; Chief J. F. Dunn, Middletown, Conn. (host); Lieut. Frank Starkel, Connecticut Deputy State Fire Marshal, and Major Robinson, Fire Marshal, Bradley Field, Conn. Attendance was about 80.

TABLE I

Tests made July 18, 1945

Nozzle Voltage and Current using Salt and Fresh Water Sprays and Streams on 11–12 KV Conductors

Test	Volts (KV) on Screen	Water	Stream or "Fog"	Nozzle Pressure (P. S. I)	Nozzle Diameter (Inches)	Distance (Ft.)	Nozzle Voltage	Stream Current (M.A.)
A	11.8	Salt	Stream	55	1	15	30–50	Undetermined
B	12.	Salt	Fog	100	1	15	(1.5)	0
C	12.	Salt	Stream	40	1¼	40	(1.5)	0
D	12.	Salt	Stream	60–70	1¼	40	0	0
E*	12.	Salt	Stream	45	1¼	45	0	0
F	11.8	Fresh	Stream	60	1¼	30	0	0
G	11.5	Fresh	Stream	60	1¼	18	50–60	5

Tests A and G could be classed as "Hazardous Distances."

Tests B to F, inclusive, could be classed as "Safe Distances."

*Test E gave a slight intermittent reading of less than 1.5 volts at 40 ft. distance, possibly indicating that the stream break-up was less at 45 P.S.1 than at 60–70. The voltage at nozzle, in Tests B and C, were less than 1.5 volts in each case.

Official U. S. Army Signal Corps Photo

Parker Vickery, Assistant Fort Bragg, N. C., Fire Chief, Is Said to Reign Supreme Among Hand Grenade Throwers. As Far as He Has Been Able to Ascertain No One Has Bettered His Record of 255 Feet, One-Half Inch, Set During the Armies of Occupation Championship Athletic Meet Held in Coblenz, Germany, in July, 1921. A Sergeant in the Last War, "Chief," as He Is Known Throughout the Post, Is Shown Here While Heaving a Few Just for Practice.

Public Relations and the Fireman

Every Fireman, Regardless of Rank, Title or Experience, Engages in Public Relations Work

By THOMAS FISHER*

FROM the fireman's standpoint, public relations include every contact made with the public as an individual member of the Fire Service—so planned that the result will be mutually beneficial, through improved fire prevention and fire control.

Every fireman, regardless of rank, title or experience, engages in public relations work.

When we act to remove a fire hazard, to put out a fire, to clean up after a fire, or to promote a new piece of equipment or a new fire ordinance, we attempt constructive Public Relations. If we are successful, it is because we put into action certain fundamental principles. But should we fail to accomplish those ends which we attempt, then we must analyze our plans, our objectives and ourselves to learn wherein lies our weakness.

Every large corporation has on its staff one or more public relations men whose duty it is to win public approval of the company and its products or services. They mold public concepts of the company into favorable form so that the company may grow with a minimum resistance on the part of the public.

Think what this means in terms of Fire Departments!

We depend for our success upon the public and its willingness to approve our services—we have no specialist to direct us in policies which will win public cooperation for our programs.

Have you ever realized that in your town every citizen on the street, every child in school, every visitor to your community has a concept of your department and of you as individual firemen? What he believes may be true, or it may be false, but in no case is it as high as we might wish.

Therefore, we need to know how to plan so we may win his approval, how to improve his opinion of us as firemen, based upon our true worth, how to provide him with a knowledge of fire causes, means for the safe use of devices which may cause loss of life and property. And of greatest importance, we need to know how to change the citizens' mental attitude which cancels the effectiveness of our fire prevention efforts. In short, if we are going to function efficiently as firemen, we must engage in constructive Public Relations.

"All right," you say, "but who is responsible for Public Relations — the Chief?" Yes, the chief is responsible, but only for his part. We as firemen are principally responsible for carrying the load. Our Fire Prevention Bureau inspectors, our officers and all city departments can aid in building a stronger fire service, but the volume of work will be done by the man in the ranks. He will make contacts with individuals in making inspections, fighting fire, rendering first aid and assisting when the public in need turns to the one branch of its government keyed to serve in emergencies. All the speeches, films, posters and newspapers in the world cannot undo the impressions he makes, whether good or bad.

Firemen are no different fundamentally from other men in organized groups: they reflect the spirit of the man at the top. If he is a true *leader*, he leads his co-workers to accomplish the common end; he does not have "I" trouble. He does not have to "pick brains" as a thief picks the pocket of another, and steal credit for ideas and the work of his men. He has no need to do these things if he is a true leader, for he inspires such confidence in his staff that they lift the quality of the entire department and himself as well, to a new and higher recognition by the citizens. Good leadership results in cooperation within the department. Bemoaning a lack of cooperation often indicates a lack of *operation*—nothing is being done for lack of willingness on the part of a leader to permit progress or a lack of ability to inspire a desire to improve. A positive attitude on the part of a leader is reflected in the attitude of men and officers alike, in their speech, their dress, the condition of apparatus and stations and the type of service they render.

Room for Improvement

There is abundant evidence to prove that no fire department is functioning today at 100% efficiency. Perhaps you have old equipment, or an inadequate water distribution system; the fire alarm system may be outmoded, or perhaps you and your brother firemen may need more training. On the other hand, these factors may be right up to Underwriters standard and still leave room for improvement in your Fire Prevention program.

If you and your department are going to get ahead, you'll certainly need a *head;* you'll have to think out your plan before you act; write it all down carefully. Any plan worth putting into action is worth putting on paper first.

First you need to determine *what* is the objective, then plan *how* to attain it. Do you wish to secure some new piece of apparatus, a pumper or new ladder? Or perhaps you plan for an enlarged water system or fire alarm service.

Keep in mind that you will have to sell many citizens on the real need before you get it, so *get it on paper* first and save yourselves needless mistakes, wasted time and disappointments which result from half planned actions.

Before you start analyzing your problem you may believe you need another pumper, but when you are through planning how to prove this need you find you really need an additional fire station in an outlying district; or it may develop what you really need is upgrading training for your department.

We all know there is no magic in red paint, and that a few thoroughly trained, experienced firemen can use old equipment and out-perform a dozen poorly trained men who lack "know how." Too many fire departments are concerned only with the pumper or apparatus problem, seeming never to concern themselves with water supply and distribution, alarm signal system improvement or personnel training, until the Underwriters engineer asks embarassing questions.

It seems evident that today no fire department is utilizing its full potential power in preventing fires.

Every fire department in this state has men in it who, with encouragement and little added training, could do public relations work—work which would win strong cooperation from all our citizens.

The fire prevention we do is only a limited effort in a field so wide that every man, woman and child is personally interested in some phase of it. They are waiting this very minute for you—and I mean for each of you—to show them how to avoid having a fire. They are eager to know how to use their electric irons, stoves, furnaces and even matches and cigarettes without spoiling their homes; how to live safely without causing a fire.

The Public Must Be Told

These people want to know how to prevent the spread of fire if it should occur; they want to know how to call you to come and help them.

Taxpayers and public officials alike want you to have the tools and equipment you really need; the water system, alarm setup and trained firemen, if you can prove to their satisfaction you do need it. Our problem is not so much how to get something, but how to convince the public we need it so we can give even better service. If you are doing your best with what you have, and you place your problem fairly and clearly before the people, you will be given whatever else you need regardless of the selfish interests of the few who may try to interfere.

For example, we have mistakenly tried to sell "Fire Prevention" to the citizens—a high sounding strange subject which reappears briefly each year only to disappear like the groundhog. People are not interested in how many millions of dollars were destroyed by fire nor how many thousands of homes

*Deputy State Fire Marshal, San Francisco, Calif.

were burned. These are cold statistics, meaningless to all but a few.

Those were other people's dollars and homes far away or at least in some neighborhood not our own.

We need to sell people on the basis of their interest. They are interested in enjoying comfort in their home with no gaping hole in the bedroom wall or a partially burned roof; no comfortable chesterfield lost through a cigarette fire.

No woman wants the dirt and mess of a fire with the stink of smoke in her house for months; no man wants the upheaval in his home so very much worse than spring housecleaning.

Talk to each individual and each group in terms of his own likes and dislikes, his interests and experience. See the problem from *his* point of view.

Protection of Production

Keep clearly in mind the interest of a manufacturer is in *continuous production;* he cannot afford to have fire interfere with his planned output; but the city managers' interest is in *cost to the city* —savings to the city and use of equipment.

When enlisting the aid of any group, think what that group is capable of doing, what its functions and interests are. If you wish to correct a condition involving false alarms do not go to Service Clubs; instead, make your appeals to school authorities; Parent-Teachers Associations and the local police. Through Public Relations you can influence whole groups in industries; safety organizations, union meetings and factory employee groups, while service clubs such as Rotary, Kiwanis, Lions, Exchange and Twenty-Thirty give strong support. Every organization of five or more persons should be contacted directly in your public relations plans.

When planning what *means* to use to gain some objective through Public Relations, consider first what mediums are available for your use. Then decide which will prove most effective.

You may not have access to a radio broadcasting station nor be able to obtain film and trailers, but you certainly have a newspaper, posters, printed bulletins and pamphlets. And some of the most lasting results have been achieved through use of models and demonstration apparatus built by firemen in the stations.

Newspapers the Most Effective Agencies

Newspapers are the widest contacting medium and they can be your most effective tool in shaping public opinion, if you work with the Editor and his staff. You would do well to cultivate your local newspaper man if you plan Public Relations campaigns. He is a well of information on how best to reach and influence certain groups and the body of local citizens as a whole. He is eager to get your story, if you will give him facts because he sells stories founded on facts to his public. Of greatest value to you is his genuine interest in everything going on where constructive ideas and people like the fire fighter profession are at work. Get to know him well; it will pay dividends.

A campaign planned to reduce fire hazards in mercantile zones or to increase employee life safety will probably find talks made before service clubs and union organizations most effective. A well trained fireman quartet was used by one fire department to get their fire message before clubs.

A study of reported methods used by Fire Departments throughout the nation shows displays in department store windows to be very effective for telling a simple story, such as the danger of electric hand irons and unprotected ironing boards, whereas vacant stores can be used for setting up a display of common household hazards.

In residential zones, printed matter distributed by uniformed firemen before autumn fires are lighted can be tied in with the chimney sweep sponsored by the Fire Department. He runs his advertisements in the local paper, uses the Fire Department business 'phone—his calls are taken for him—and public interest is aroused and maintained by simple human interest newspaper stories during his four to eight weeks clean-up of chimneys. He reports to the department and the home owner any cracked chimneys in need of repair. You can see how this one phase of Public Relations can be used to continue useful contacts with your public, and save you many bothersome dirty chimney fires and damaged roofs.

If you have nothing more than a single week Fire Prevention program each year, then you are throwing away your "ration points" for public recognition, goodwill and cooperation. Plan some active Fire Prevention program for each week; think in terms of giving rather than getting—giving better fire service with the means available to you now. Then you'll never need worry over a lack of equipment or anything else for which a need can be proven.

Lacking all other means for reaching your public you have the ability to *talk.* You may not feel capable of public speaking but at least you can talk to people; you do it every day. You are accustomed to talking to individuals and any audience is just a number of individuals.

When you speak to people, whether as individuals or groups of individuals, speak naturally; never make a "speech"; it's not worth the effort. Just speak naturally and don't allow yourself to be nervous.

Two requisites are essential (1) *Something* to say and (2) *Sincerity* in saying it.

Have a purpose for speaking to explain; to cause to feel; to cause to believe; to cause to act or to amuse. Keep your purpose clearly in mind all the time.

Plan your talk; think it out!

Keep the picture of your audience in your mind when you plan your talk, for your talk is *for* them and not at them.

Keep it simple, in words of one syllable and, above all, prepare what you will say carefully, then say it sincerely.

Keep in mind that we have an idea to sell; we must convince if we are to get him to go along with us.

To conclude, take this new point of view with you as the key to all your Public Relations work; remember always that the citizen, not the fireman, is responsible for starting the fires. He is responsible for creating fire hazards and maintaining them and causing loss of life, mainly through ignorance.

Elimination of all these evils has proved impractical for the fire service working alone, due to their numerical and volumetric magnitude.

Assumption of responsibility for their elimination cannot be rationalized as a true responsibility or true function of the fire service alone.

But by the transfer of responsibility upon all of the citizens, it is possible that the fire service may in a larger measure than at present more effectively function to check the ever-mounting loss of property and life through fire.

New Aerial Ladder Truck for Muskegon, Mich.

Here is the new American LaFrance 100-foot aerial ladder truck placed in service recently in the Muskegon, Mich., Fire Department. Chief Chris Smith, who is shown in the lower left of the photograph recently completed forty-eight years of service with the department. He joined the department in 1896 as a part paid fieman and working up through the ranks until he became Chief on June 1, 1934.

Robert D. Hazzard Dead

Robert D. Hazzard, veteran American-LaFrance-Foamite Corporation representative in New York, passed away July 27, 1945, at the Yonkers General Hospital. He was sixty-eight years of age and one of the deans of the American-LaFrance salesmen.

"Bob," as he is more familiarly known to his many friends throughout the East, became identified with American-LaFrance on May 1, 1907. Up to that time he was a member of the Utica, New York, Fire Department.

He was assigned to the company's New England territory, with offices at Boston, Mass., where he remained until 1913, when he was transferred to the New York territory.

During Bob Hazzard's period of service, he saw many great advancements in the science of engineering and manufacturing fire-fighting apparatus and equipment, and did his share in contributing to the advancement.

When he was first employed by American-LaFrance, fire-fighting apparatus was horse drawn. American-LaFrance steamers and the hook and ladders were then in their prime.

With the development of motorized fire-fighting apparatus by American-LaFrance, Bob Hazzard was in the vanguard of its introduction and ready adoption by leading city fire departments in his territory.

In 1928, he organized Robert D. Hazzard, Inc., an eastern states agency of the American-LaFrance company, which agency he maintained up until the time of his death.

A 32nd degree Mason, Mr. Hazzard was a member of the Everett, Mass., Lodge, F. and A. M., and a member of Yonkers Commandery, Knights Templar.

He was an Honorary Life Member of the International Association of Fire Chiefs.

Surviving, besides his widow, are a son, Lawrence S. Hazzard of Yonkers, former Assistant District Attorney of Westchester County; two daughters, Mrs. James P. Trotter, wife of the Yonkers Fire Department surgeon; and Mrs. Charles Parker Swan of Everett, and six grandchildren.

Retirement Systems in 858 Communities

Retirement systems for municipal employes are in operation in 81 per cent, or 858, of the nation's cities of more than 10,000 population, the International City Managers Association reported recently. Forty-five of the communities joined the list this year, though most of the 45 adopted their plans in 1944.

The municipal pension systems are of two types: all classes of employes are covered in the first type, in operation in 379, or 36.7 per cent, of the cities with retirement systems; only part of the employes are covered in the second type, in operation in 479 of the cities.

Slightly more than two-thirds of the latter cities provide coverage for fire and police employes only

Minimum and compulsory retirement ages applying to municipal or general employes (other than police or firemen) of 360 cities reporting this information vary to some degree, according to the association's report.

The minimum retirement age in three-fourths of the 360 cities is 60 years; 43 cities have a minimum retirement age of 55, 30 cities fix the minimum at 65, and the remaining cities have various mini-

(*Continued on page* 587)

Echoes of the Far-Flung War

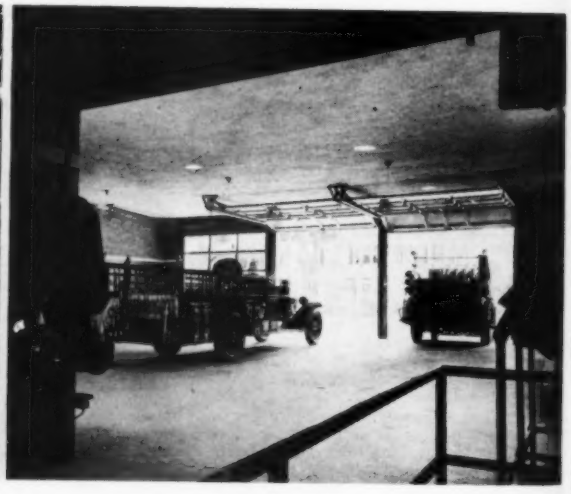
Top: Parts of V-2 bomb which landed in England. The ravages of this destructive weapon were cut short by the Allied victory over Germany.

Center: Army of occupation eliminates German prison camp. After all prisoners had been removed from the notorious Belsen Concentration Camp in Germany, the Army of Occupation made quick work in demolishing the vermin-infested buildings. A few seconds' use of a flamethrower was all that was needed to ignite the structures. Here they are shown burning vigorously.

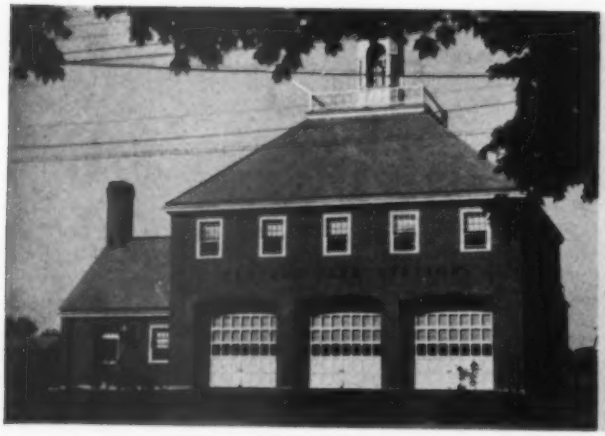
Bottom: When the Japanese burned Manila, clouds of black smoke rose from the St. Nicholas section. Fires presumably were started by Japanese demolition experts as Yanks drove into the city.

MODERN TRENDS IN FIRE STATION DESIGN

The Modernistic, Attractive Fire Station of the Petaluma, Calif., Fire Department.



Left: Farmington Village, Me., Has a Modern Fire Station. Right: Interior of Farmington Station. Note Overhead Doors.



Left: The Central Fire Station of Hingham, Mass. Right: A Suburban Fire Station at Arlington, Mass.

Retirement Systems in 858 Communities

(*Continued from page* 585)

mums ranging from 50 in two cities to no specified age in 17 communities.

Seventy years is the compulsory retirement age in about three-fourths, 253, of the cities, with 43 cities fixing the retirement age at 65, and 61 cities having no compulsory retirement age.

In cities having retirement plans applying only to police or firemen or both, the minimum retirement age ranges from 50 to 65 years. Of the 182 cities reporting this information, however, 54 per cent have no minimum retirement age. Likewise, 67 per cent of the 289 cities reporting on compulsory retirement have no compulsory retirement age; of the remaining cities 44 require retirement at 65, 19 at 60, 19 at 70, and the remaining between 55 and 66.

Brush Rayon Hazardous

Data released by the office of the Ontario Fire Marshal, Wm. J. Scott, K.C., throws added light on the hazards in certain types of rayon clothing.

The Marshal's office investigated seven fires that occurred in what were classified as "brush rayon" sweaters while worn by individuals in two Canadian cities. A 16-year-old boy getting off a street car started to light a cigarette, when his sweater began to burn. A small boy was out playing and his sweater caught fire. The boy extinguished the flame by rolling on the ground as he was taught to do by the Boy Scouts. A man sitting in a cafe lit a match and his sweater started to burn. The storekeeper where he had bought it replaced it with a similar sweater, and as the man walked down the street, a policeman noticed that the back of his sweater was on fire. Both the police officer and the man suffered burns in putting out the flames.

Another man was sitting in a theatre smoking a cigarette, when his sweater started to burn. A woman wearing one of these sweaters reached across a gas stove and on two occasions her sweater began to burn, even though it had not been in direct contact with the flames.

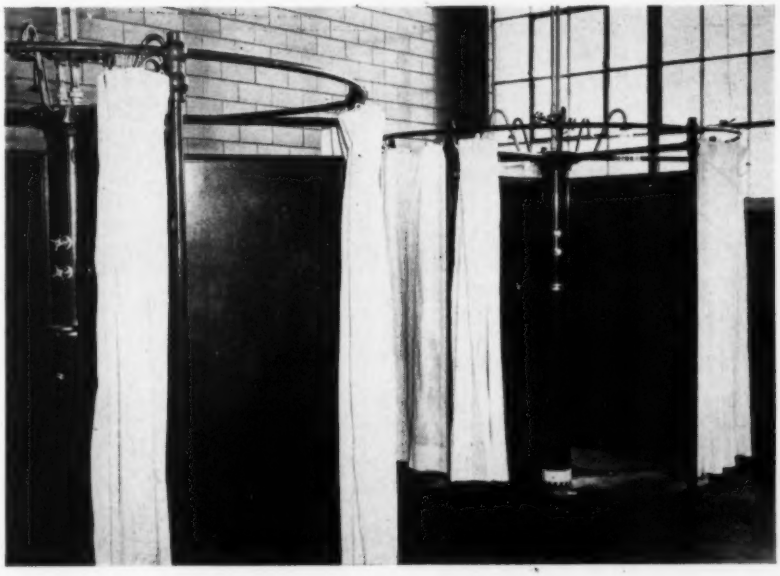
Investigation by the Marshal's Office of the process of making the original material and the fabrication of the garments in five cities, confirmed by analyses of the sweaters by Professors of the University of Toronto, indicates that there was no chemical in the sweaters causing spontaneous ignition, even though all the sweaters but one ignited the first time they were worn after being purchased. Four of the fires are believed to have started from the flaming of a match in the hands of the wearer.

Chief C. C. Killian Replaced

Chief C. C. Killian of the Fort Worth, Tex., fire department was recently replaced as chief by C. L. Ligon, veteran fire marshal. Chief Killian served as Chief since July, 1939, and was a member of the department since 1922.

Second oldest fireman in point of continuous service in the department Chief Ligon came into the department in 1906 and has been fire marshal since 1925.

Equipment of the department was horse drawn, and fire alarm boxes were pretty far apart, when Ligon went to work as a relief fireman. He stepped up the ladder to lieutenant in 1910 and to captain in 1911, when he was made secretary of the department and fire alarm operator. He became fire marshal in 1925.



Modern Trends in Fire Station Design

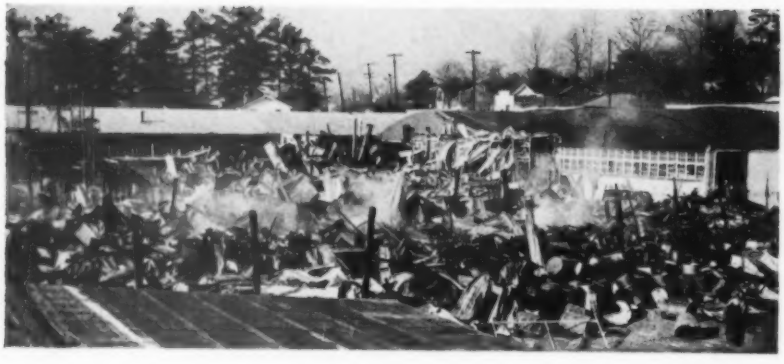
Top: A single company station at Whittier, Calif.; compact, yet attractive and practical. Center: A combination station at the same city, housing an engine and a truck company. Bottom: Factory type showers provide facilities for four men each.

SOME TYPICAL FIRES OF THE YEAR

Upper left: Ruins of a general alarm fire which destroyed three mill buildings, damaged a fourth and scorched several others at Paterson, N. Y.
Photo courtesy of Richard Adelman.

Left center: Over three million pounds of wool was destroyed when a wool scouring house of a processing firm at Philadelphia, Pa., burned.

Lower left: When this ordnance-producing plant burned at Washington, D. C., a loss of $250,000 resulted.



Above: A small blaze, but a substantial loss resulted when the jewelry store was gutted by fire at Long Branch, N. J.
Photo courtesy of Frank Wilgus.

Below: An oil company's office and warehouse were demolished by this hot fire at Knoxville, Tenn.

SOME TYPICAL FIRES OF THE YEAR

Above: A loss of $200,000 was experienced when fire razed this Lakewood, N. J., school. Photo courtesy of Frank Wilgus.

•

Below: When the solvent extrication plant of a chemical factory at Bridgeport, Conn., exploded, the structure was badly damaged by the blast and succeeding explosion. Photo courtesy of Tom Magner.

•

Upper right: Fire destroyed a two-story warehouse of a cabinet plant at Kearney, N. J.

•

Right Center: Litchfield, Conn., had its largest blaze in years when fire destroyed St. Anthony's Church. Loss estimated at $100,000. Photo courtesy of Tom Magner.

•

Lower right: Fire, starting in the drying room, completely levelled the four-story brick plant of the Spaulding Fiber Company at North Rochester, N. H., causing one fatality and $750,000 loss. Photo courtesy of Manchester, N. H., Union.

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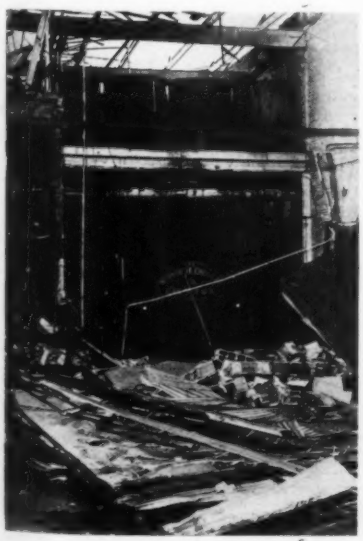
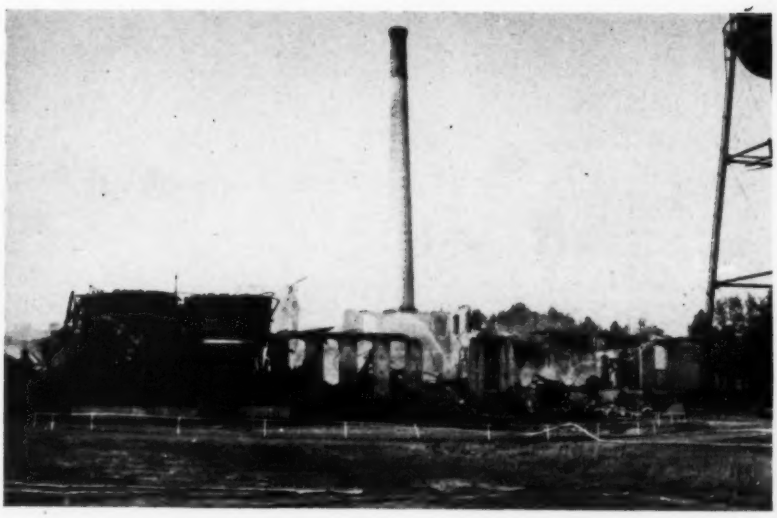




Short Cuts and Gadgets

IDENTIFYING COUPLINGS AND TOOLS

To facilitate identifying company tools and hose couplings, a number of municipal fire departments assign a special color to each company and the respective colors are painted on certain portable equipment and hose fittings and couplings. Thus a length of hose from one company added to the line of another company can be more readily identified than where the coupling is stenciled or stamped with the companys' numbers and each coupling must be picked up and scrutinized in order to identify it.

W. B. R.

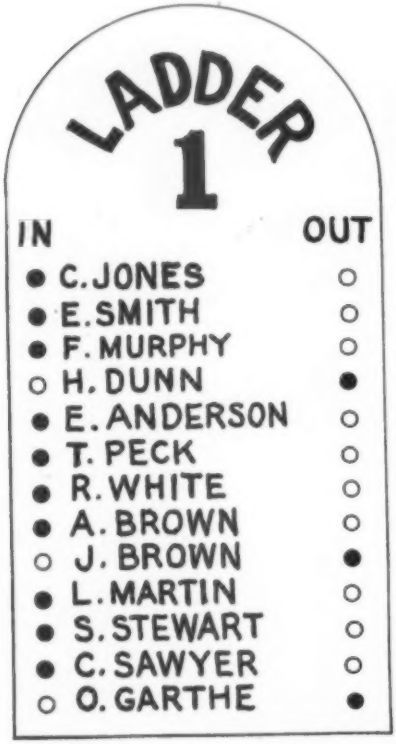
* * *

COMPANY ROSTER

Here's an idea for keeping track of membership in a volunteer department submitted by Henry T. Hanson, Maynard, Mass.

The type of roster board illustrated is used by the fire department of a small city to determine at all times the number of men available to answer an alarm.

The quarters of the company are located in the basement of the city hall, where a man is on duty at all times to answer police and fire calls and sound the fire-alarm whistle.



A strict rule is maintained requiring all members of the company to report absence from the city, or any other reason that would prevent them from answering an alarm, to the man on duty who then moves the peg from in front of the member's name to the right-hand side of the board, where it remains until he is again available for duty.

In the event of an alarm, a glance at the board, which is hung in a conspicuous place on the apparatus room wall, enables the officer in charge to know the number of men he can expect to respond and govern his actions accordingly.

Editor's note: This board will not indicate whether or not the member actually attended the incident; it quite obviously is not intended to take the place of an attendance record or roll-call. Recording the attendance at fires and drills is done in different ways, and the editors would welcome contributions from readers on the best way to handle this annoying problem of the volunteer service.

* * *

A DRY "PARKING" SPACE

Volunteer firemen who leave shoes and other apparel at their trucks when they change into coats, hats and boots may find upon their return that rain, or water from hose streams, has soaked their belongings, which are usually left on the running board or tossed on the driver's seat, or the truck body.

One hook and ladder company helped the situation by having a tarpaulin cut to fit over the open space between the back of the driver's seat and the instrument panel, or windshield. This cover was fitted with grommets and so fastened that it would quickly be loosened and rolled aside should the driver desire it. Under the cover, shoes or other articles left on the seat or floor were out of the wet, as were the instruments and upholstery of the driver's seat itself. This was a service truck, but the idea has also been adapted to non-cab aerial trucks.

* * *

PROTECTING POLE HOLES

In an earlier issue we requested readers to tell us how they protect pole-hole openings. Since then we have received so many replies worthy of inclusion in "Short Cuts and Gadgets" that we expect to publish them in a separate article on the subject.

It isn't too late; if your company or department has any special method of safeguarding sliding pole openings, and/or pole landings, tell us about it, and reap a reward—$5 if accompanied by usable photo or sketch—$1.00 for the idea alone.

* * *

TO IMPROVE THE GRIP

Never let it be said that FIRE ENGINEERING's readers are slow on the uptake. Many of 'em have taken ideas from "Short Cuts and Gadgets" and gone us one better with them.

Take this letter, and suggestion from Fire Chief John E. Wieland, New Lexington Volunteer Fire Department, New Lexington, Ohio, for example.

He writes:

"I was interested in the article 'When is Right Side Up?' on your 'Short Cuts' page in the May issue of FIRE ENGINEERING.

"It is a problem to know if a hook is up or down after getting a pike pole through a ceiling and especially in the dark, and I am glad to have this information and will immediately mark all pike poles on our truck in this manner.

"It is also difficult to withdraw a pike pole from a ceiling because of the smoothness of the pole, on which you cannot get a fire grip. I have solved this trouble by having grooves turned around the hand end of all our pike poles, so when grasped you can get a firm grip on them, making it much easier to extricate them when stuck.

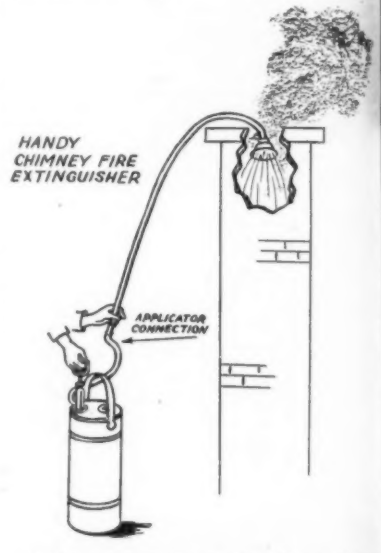
"We also have all poles fitted with 'U' irons on the ends for passing hose lines up fire escapes or from window to window to roof, with a hose strap or rope.

"I am enclosing a sketch of same and if it is worth passing along I am glad of this opportunity to help my fellow firemen."

* * *

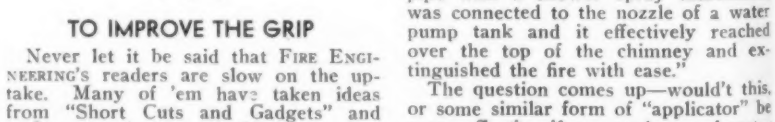
CHIMNEY FIRE "APPLICATOR"

From J. T. Deichman, USNR, Jacksonville, Fla., comes a "short cut" which he says was developed by John Hoppe, H & L Co. No. 22, Chicago Fire Department. He says:



"Too often, while extinguishing chimney fires, ladders are required to rest against insecure and unstable chimneys in some precarious positions, endangering the life and limb of firemen. To overcome this difficulty an extended metal pipe with a shower spray attachment was connected to the nozzle of a water pump tank and it effectively reached over the top of the chimney and extinguished the fire with ease."

The question comes up—would't this, or some similar form of "applicator" be more effective if operated on a booster line? We've heard of some fire departments using water fog and fine spray on chimney fires with some success. How about it, readers?



Manufacturers' Announcements

Copper Returns to Extinguishers

The General Detroit Corporation, manufacturers of fire extinguishers and other fire fighting apparatus, announces that production is being resumed on its

F. Dale Bacon, General Manager of General Detroit Corporation's Fire Extinguisher and Industrial Divisions, Holds in His Hands the First Red Star Soda-Acid Extinguisher to Roll from the Assembly Lines Since the Lifting of Wartime Copper Restrictions.

pre-war copper finish soda-acid and foam type extinguishers. Discontinued early in the war because of material shortages, Red Star Soda-Acid and Floafome Foam Type extinguishers will be available early in July.

New Type Plaster Hook

Harry J. Eimmerman, a fireman attached to Engine Co. No. 3, New Haven, Conn., has developed a new type of plaster hook having many novel features. This new tool is illustrated in the sketch herewith.

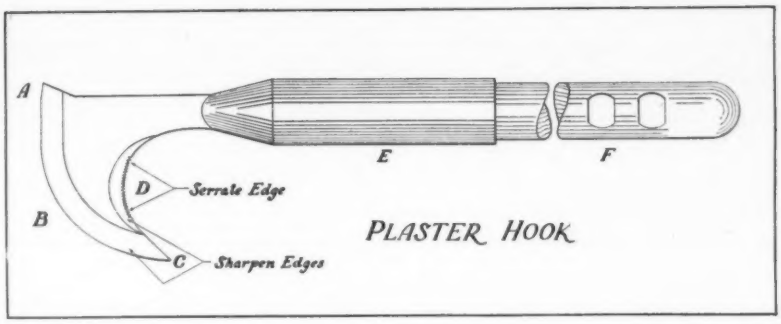
Some of its features include:

The flare on the blade (A) gives more surface, when used as an opener, and is also handy to facilitate penetration when either wood, plaster or metal ceilings are encountered.

The sharp edge (B) that comes down to the point, and goes back up in under the head, is to remove sash, trim, wainscoating, window casings and can be used to force windows and in some cases, doors. In addition, it can be used to rip off shingles of the wood, tarpaper and slate variety; also asbestos siding, woodshingle and other simulated sidings. It has also been used to shear nails and screws, which impede progress of removal. The clean cutting of plaster walls prevents lateral damage when pursuing the course of a fire.

The serrated edge (C) can be put to good use in the shearing of overhead wires, bale straps and binding wire.

The socket (D) for the handle does

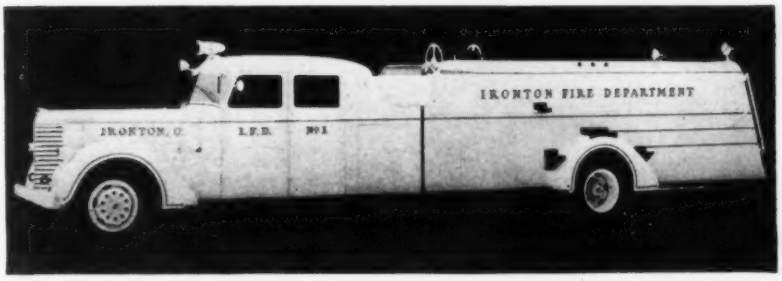


not taper but is the same width throughout to hold the 1¾-inch handle, giving more strength to the tool when opening windows and doors.

The handle (E) is of ash and should not exceed ten feet, as that is the effective working limit of a plaster hook.

The four finger notches (F) in the handle give the user a better hold for a pull, and also show the position of the hook in the ceiling or wall.

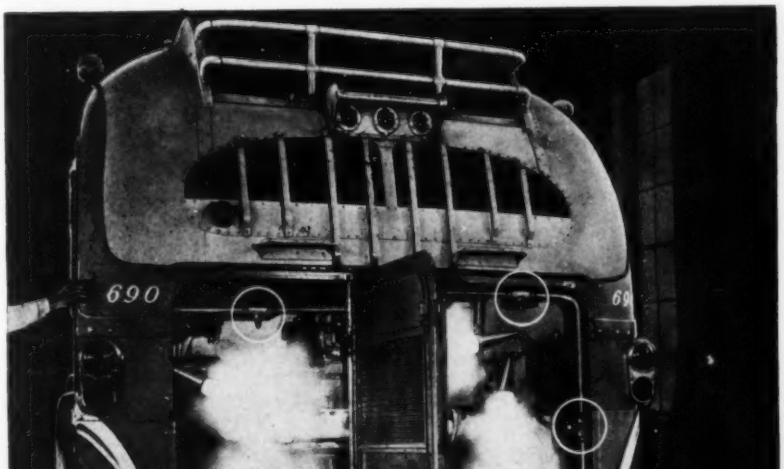
(*Continued on page* 628)



Buffalo Quad Delivered to Ironton Fire Department

The Ironton Fire Department, Ironton, Ohio, has recently accepted delivery of this new Buffalo Quadruple, which is equipped with a 750-gallon pump and 237 feet of ground ladders.

The fully enclosed cab has two seats which are each sixty-eight inches wide and provide seating capacity for seven to eight men.



New Extinguishing System to Control Bus Engine Fires

Photograph shows operation of the new Kidde built-in fire-extinguishing system for the engine compartment of buses. Specially designed flame detectors, three of which are circled in photo, are spotted at danger points around the engine, and an outbreak of fire near any one of them instantly flashes a warning red light at the dashboard. The operator's quick pull on a fire handle, either near his seat or on exterior of bus as shown here, releases a flood of compressed carbon dioxide gas, which chokes out the fire. The gas is odorless and non-toxic, and causes no damage whatever to the engine.

For Practical Discussion of Current Fire Department and Fire Management Problems

REINSTATEMENT OF DISCHARGED VETERANS IN FIRE DEPARTMENTS

THE discussion in this round table is a continuation of that which appeared in the July issue of FIRE ENGINEERING on the reinstatement of discharged veterans in fire departments.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject which is described in a box on a following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40 Street, New York, N. Y.

Discussion of the Topic

D. A. Boulden, Chief, Winnipeg, Manitoba: When former firemen in the armed services are discharged, they are reinstated in their former positions with the same seniority, with increases in pay and promoted if they are qualified and if a man junior to them has been promoted in their absence. They must pass a medical examination and if physical unfit for the fire department, the city tries to place them in some other department.

All time spent in the armed forces is credited to their seniority and to their pension years.

Promotions are on seniority and efficiency.

An effort is made to place disabled men in other departments where physical fitness is not a factor.

The Dominion Government compels employers to replace all permanent employees back in their former positions if medically fit, and to endeavor to find them other positions or retire them on pension if not.

C. C. Killian, Chief, Fort Worth, Tex.: Firemen now in the armed services will be reinstated in the fire department if they are honorably discharged and meet physical standards.

All time spent in service will be credited to their fire department service since they have been given a written leave for duty in the armed forces.

They will be given preference in examinations.

All discharged members are given medical examinations by the city physician when applying for reinstatement. Those who return other than medically discharged are not required to take this examination.

By virtue of military leaves granted to those who are in the armed services, we shall fulfill our obligation to restore all men in the fire department. We feel their service to our country entitles them to every consideration upon their return to civilian life.

H. R. Chase, Chief, Miami, Fla.: We have had several men return from the armed services and they have been reinstated in the fire department. We have found that men who have been in combat duty are not the same men that left and this we have made allowances for. We believe it will take time to remedy some of these conditions.

As far as seniority goes, each man will be given credit, but this credit under the present plan does not help them any on their pension rights. This, in my opinion, should be corrected.

Under the present ruling of the civil service board, no credit is given in examinations. I cannot see why there should be, for as a general condition, serving in the armed forces doesn't necessarily make for better firemen or officer material.

We require a medical examination, but this is a considerate one. Unless a man is very ill or has lost a limb, he is returned to duty. I feel that this is the right thing to do. If a man cannot do his work he should be pensioned at a reasonable amount.

HERE IS THE QUESTION

1. When former firemen, now in the armed forces are mustered out, will they be reinstated in your department?

2. Will the time spent in the armed forces be credited to their seniority in the fire department?

3. Will they be given veteran's preference in promotions?

4. How will you handle the problem of returning ex-firemen who have received a medical discharge from the armed forces, but who want to regain their former fire department jobs?

A. C. DuRee, Chief, Long Beach, Cal.: All former members of the fire service who are honorably discharged or placed on the inactive or reserve list, will be reinstated without loss of status or seniority to the position held by them prior to entry into Federal service.

Applications for reinstatement must be made within ninety days after discharge, release or relief from active service.

Such persons must be physically qualified to perform the duties of the position previously held by them.

The above regulations are from the City Charter.

Time spent in the armed services is credited to their seniority but does not count as aggregate time served for pension purposes.

No veteran's preference is given for promotions.

Civil Service Comission rules are now in process to outline procedure of the question of medically discharged veteran members.

Thomas H. Cotter, Chief, Providence, R. I.: Section 2 of City Ordinance No. 219 provides for the reinstatement of firemen as follows: "Any person regularly employed by the City of Providence who is a member of any reserve component of the land and naval forces of the United States and is or has been assigned to active duty under public resolution No. 96 of the 76th Congress approved August 27, 1940 as amended, who, in the judgment of those in authority over him while on said active duty, satisfactorily completes such active duty, and receives the certificate and statement provided for in section 3 (a) of said public resolution, shall, at his request, be restored to his said employment or to a position of like seniority, status and pay unless said certificate and statement shows that he is physically or mentally disqualified from performing the duties of said employment. Said employee shall make his request for such restoration of employment within forty (40) days after he is relieved from such active duty."

In our new training system, a veteran is allowed ten points.

Patrick J. Keelan, Chief, Elizabeth, N. J.: On showing his honorable discharge and passing a medical examination a veteran may be reinstated in the fire department.

The time spent in the armed forces will be credited to his seniority in the department as well as salary advancements.

According to State Civil Service rules and regulations he will be given preference in examinations.

We have had one fireman return with a medical discharge. He has been reinstated in the department.

We have some men who never served a day in the department. They were on the civil service list, taken in selective service and then appointed to the fire department. Some have been in the armed services for three years and when they return they will be first grade firemen. Three years service entitles one to take the promotional examination for captain. If some of these men should take the examination, they might even be appointed captain without any fire duty.

F. C. Vernotzy, Chief, Akron, Ohio: Firemen returning from military leave will be reinstated with full seniority rights to the Akron Fire Department.

Veteran's preference in promotional examinations will be subject to such action as the Civil Service Commission of Akron may decide upon. At present there is no provision for such preference.

It will be the aim of this department to reinstate returning firemen if at all possible. Certain positions may be capably handled by men who have slight physical defects, but again, many of these decisions must rest with the Civil Service Commission.

C. J. Eisenbacher, Chief, Tacoma, Wash.: Firemen returning from the armed services will be reinstated and given their full seniority. Veteran's preference will be given only in entrance examinations.

When a former fireman returns from the armed service, he must appear before the Pension Fund Physician for a medical examination. If in the opinion of the doctor, he is able to carry on as a fireman he is reinstated to the same position and rank as he held prior to his entry into the service. In the event the doctor finds the former fireman not capable of performing his duties as a fireman, he will be given ninety days in which to regain his health to take up his duties where he left off.

A. Brown, Chief, Birmingham, Ala.: Under a resolution passed by the City Commission and concurred in by the Personnel Board, all members will be given their jobs back if physically able to handle them. Time in the armed forces will be credited to their seniority in the fire department.

Promotions will be by competitive exams. A credit of one point per year will be allowed members in the armed services the same as to members who stayed in the fire service.

John L. Rourke, Chief, Detroit, Mich.: Former firemen now in the armed forces will be reinstated in the fire department if they apply within ninety days after their honorable discharge. Time spent in the service will be credited to their seniority.

These men will be promoted to whatever position they are entitled to, according to seniority.

If the disability of those who have medical discharges does not interfere with fire fighting duties, they will be reinstated. Civil service has established a veterans' bureau to handle all other cases.

H. F. Lyles, Chief, Houston, Tex.: Men who have been granted military leaves will be accepted on return if at all possible; that is, if their physical defects are not such as to incapacitate them. In such an event, we do not know what may be done. We have been taking as temporary emergency employees men who have been given medical discharges or placed in 4F classification, when their disabilities are of a nature that permits them to perform a measure of satisfactory service.

Charles De Vleeschower, Chief, South Bend, Ind.: All men in the fire service who have been inducted under the Selective Service Act or have been or may be taken into military service by induction, enlistment or commission or assigned by the government to war work and are temporarily absent from their respective fire department are considered as members of the fire service on temporary leave of absence. All time spent within the military service or war work when assigned by the government is considered as part of their service in the department and is computed toward their service entitling them to pension consideration.

No member of the pension fund is deemed without benefits within the pension fund by reason of his failure to pay any assessments while he is assigned to government war work or to military service.

Each fireman desiring to return to service in the fire department must present himself before the proper authorities charged with the responsibility of regulating and employing men for the fire service within sixty days after his honorable discharge from military service or government war work to which he has been assigned.

Within fifteen days after so presenting himself, such fireman is placed on his proper assignment if he is physically able. If not, he is retired on disability pension.

C. A. Hart, Chief, San Antonio, Tex.: Firemen now in the armed services will be reinstated provided they come back directly to their jobs in the fire department. They are credited with the time spent in the armed forces. Veteran's preference is given, provided their qualifications are justifiable

Ex-firemen who desire to regain their former fire department jobs will be reinstated after successfully passing a medical examination by our city physician, even though they have been given a medical discharge from the armed forces.

L P. Scully, Chief, Erie, Pa.: Firemen now in the armed forces will be reinstated in the fire department and given credit for the time spent in the service and also given veteran's preference on examinations.

The medically discharged veteran will immediately be reemployed as a fireman and will remain so as long as he is physically able to qualify for his duties. If unable, he will then be eligible for pension by the City of Erie.

Charles L. Slade, Chief, Des Moines, Ia.: Firemen who are mustered out of the armed services are reinstated in the department and given credit for the time spent there. A state law provides for veteran's preference in examinations.

If men with medical discharges are under the old pension system, they are either put back to work or retired on pension. If they are under the new system (actuarial) a physical examination is required which they must pass before being reinstated. If disqualified, contributions previously paid into the fund are returned to him, plus four per cent interest. We have had one such case to date.

Paul P. Heinz, Chief, New Haven, Conn.: Former firemen, now in the armed forces will be reinstated in our department and the time spent will be credited to their seniority.

No provisions have been made in our civil service rules for granting veteran's preference in promotional examinations.

Under our compensation set-up, a returning fireman who has received a medical discharge must file a release with the Compensation Commissioner freeing the city from liability as the result of a recurrence of the injury or condition contracted while on leave of absence.

Edward J. Hart, Chief, Endicott, N. Y.: Former firemen now in the armed forces will be reinstated in the fire department and given credit for time spent there towards his seniority.

The returning firemen who has received a medical discharge from the armed forces will be given a medical examination by the fire department physician. If he is found to be physically fit, he will be returned to his former position with the department. If he is not found capable of performing his fire fighting duties, he

Direct Hit on LST in Philippines

Smoke and flame spout from an LST loaded with supplies, after a direct hit by enemy planes during the assault on one of the Philippines. A destroyer pumps tons of water into the stricken vessel as smaller ships edge in to take off supplies and assist in the fire fighting.

will be placed in some other village department.

William H. Davis, Chief, Pittsburgh, Pa.: State laws and city ordinance demand that a fireman now serving in the armed forces be reinstated in his job when he is mustered out. Time spent in the armed forces will be credited to his seniority in the fire department. A state law provides for veteran's preference in examinations.

At this writing, fifty men have been discharged from the various services for one reason or another, and all but one have been able to return to engine house duty.

J. E. Parish, Chief, San Diego, Cal.: Veterans of the armed forces will be reinstated in the fire department provided that they return within three months after their discharge. They will be given credit for time in the service.

We will do everything possible to find a place they can fill. We will require that they make an effort to qualify themselves for the positions which are available.

Edward P. Welch, Chief, Columbus, Ohio.: Firemen now in the armed forces will be reinstated in the fire department and credited with time spent there.

The mayor has appointed a committee to handle the problem of returning ex-firemen who have received a medical discharge from the armed forces. If they cannot be returned to their position in our department but are able to handle less strenuous work they will be placed in other departments in the city government.

James T. Blamey, Spokane, Wash.: Former firemen now in the armed services will be reinstated in the fire department and given credit for the time spent there. They will be given veteran's preference in promotional examinations.

The Pension Board will decide each individual case of men with disabilities as it comes up. We have had no cases up to the present. The firemen in question will be given every chance to fit into some job on the department.

George E. Hare, Chief, Jacksonville, Fla.: Firemen on military leave from our department will be reinstated upon their release from the armed forces. They will be credited with time spent in the armed forces towards their seniority in the fire department.

The men with disabilities will be given their jobs back if they have no lost limbs or mental incapacity which would be a handicap to the fire service. Otherwise they will be placed on disability pension.

William J. Sudeith, Chief, St. Paul, Minn.: Firemen now in the armed forces will be reinstated in the fire department if they pass a medical examination. If they cannot, they will be placed on disability pension. They will be given credit for time spent in the armed forces towards their seniority and will be given veteran's preference in promotional examinations.

R. A. Starling, Chef, Tampa, Fla.: Firemen in the armed forces will be reinstated in the fire department and given full seniority rights. Whenever it is practical to do so, they will be given preference in examinations.

If they are retired from the armed forces and receive disability payment for such service, we will make up the difference between the amount they receive from disability, up to and not exceeding $50.00 per month as a total from both sources.

Clarence W. Brown, Chief, Wichita, Kans.: Firemen now in the armed forces will be reinstated in the fire department providing they are physically fit to perform such duties that are required of firemen in the protection of life and property.

The time spent in the armed forces will not be credited to their seniority in the fire department, nor will they be given veteran's preference in examinations.

The veteran claiming disability preference must personally establish his disability and his freedom from such defects as would incapacitate him in the duties of the position for which he is eligible.

Joseph A. Kirby, Chief, Dayton, Ohio: Veterans of the armed forces will be reinstated in the fire department and given seniority rights for the time spent in the services. Veteran's preference will not be given in promotional examinations.

The men will have to undergo a physical examination regardless of having received a medical discharge or not from the armed forces before they will be restored to their former fire department jobs.

H. C. Root, Chief, Springfield, Mass.: Firemen now in the armed services will be reinstated in the fire department if they pass a physical examination by the city physician. No time is lost while they are in the armed forces. Veteran's preference will not be given in promotional examinations.

Edmund B. Lewis, Chief, Scranton, Pa.: Firemen formerly in the armed forces will be reinstated in the fire department if they are physically fit. Time in the services will be credited to their seniority in the fire department.

H. D. Demonbreun, Chief, Nashville, Tenn.: Former firemen now in the armed forces will be reinstated in our department and given credit for the time spent towards their seniority. They will be given veteran's preference in promotion examinations.

If their physical condition is such that they cannot perform their duties as firemen, they will be pensioned if they are regular firemen.

John A. McCracken, Chief, Gary, Ind.: Legislation passed at the 1943 session of the Indiana State Legislature provides that a fireman discharged from the armed services be reinstated and given credit for the time spent there towards his fire department seniority.

If their disability permits, returning veterans are reinstated in the department and placed in the Fire Prevention Bureau, switch board or fire alarm system or in active service.

John C. King, Chief, Hartford, Conn.: If a returned veteran can pass a physical examination he will be reinstated in his former job in the fire department. He will be given credit for the time spent in the armed services towards his seniority in the fire department.

Barney J. Houston, Chief, Cincinnati, Ohio: If a man is found physically fit by the department surgeon he will be reinstated in the fire department and given credit for the time spent in the armed forces towards his seniority in the department. If not, he will be retired on pension.

W. G. Lutkey, Chief, Oakland, Cal.: If a medical examination decides that a man is fit for duty he will be reinstated in the fire department after being mustered out of the armed forces. Time spent in the armed services will count towards his seniority in the fire department. Veteran's preference will be given on promotional examinations.

C. C. Jennings, Chief, Tulsa, Okla.: Firemen now in the armed services will be reinstated and credited with time spent there towards their seniority in the fire department.

Men with medical discharges must be examined by pension board doctors to determine the nature and extent of their disability. Oklahoma has a state law governing same.

Frank M. Savage, Chief, Syracuse, N. Y.: Firemen now in the armed forces will be reinstated and credited with the time spent there towards their seniority in the fire department. Veteran's preference will be given in promotional examinations.

Ex-firemen with medical discharges must be examined by the department doctor before they are reinstated.

We have forty-one men in the armed services. They will take their positions in the fire department as soon as they are released from the army.

We recently appointed a veteran who was released from the army under the point system. He was sixty-seventh on the 1941 civil service

(*Continued on page 628*)

HERE IS THE QUESTION FOR THE NEXT ISSUE

A fireman entered a fire department in 1916, and through efficient performance of duty and self-preparation advanced by civil service examinations, to the position of Assistant Chief. He was temporarily appointed Acting Chief upon retirement of the Chief, and is considered an outstanding fire officer.

To select a permanent Chief, the Board of Fire Commissioners is to hold an examination open to "any citizen within the boundary limits of the city, and each applicant must be between the ages of twenty-five and fifty-five years."

The present Acting Chief is sixty-one years of age, so he will be automatically barred from the examination.

1. **Do you believe the Board of Fire Commissioners are acting wisely in this case?**
2. **Do you feel that experience and ability in this instance outweigh the age limitation?**
3. **What, do you believe, would be the soundest and most equitable solution to this situation?**

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Not the Heat—It's the Stupidity

Speaking of the heat—there's the guy listed among the heat victims who came charging, wild-eyed into the firehouse of Eng. Co. No. 262, Astoria, N. Y. C., yelling he was being chased by two men and demanding that they "put out the fire."

Police finally "put it out" after the overheated visitor, identified as Matthew Reilly, 35, homeless, had called the fire alarm dispatcher and demanded that he do something about the weather; smashed a glass-covered board listing fire boxes (assignment board) hurled chairs through four glass partitions and scrawled across the fire blotter (journal).

He cooled off in the "cooler" charged with malicious mischief and illegal entry.

* * *

"Fired" for "One-Man Strike"

Benjamin F. French, Sioux City Fire Department lineman who has been waging what firemen termed a "one-man strike," says he has received a letter from Fire Chief Charles B. Kuhl that he was "through" and that the discharge was ordered because he was absent from his duty.

French, president of International Electrical Workers Union 231, said that he left the position after negotiations between Chief Kuhl and him appeared stalemated. He said he had asked for more money because of increased responsibility. The Union president said he was undecided as to future plans. (Thanks W.B.T.)

* * *

Falsealarmer Trapped by Voice

From Herb' Friede, Superintendent Fire Alarm Bureau, District of Columbia, we learn that science has triumphed again in the fire service, with the arrest of William Foreman, 33, colored, on charges of turning in numerous false fire alarms.

Foreman, former auxiliary fireman, the police say, turned in at least 80 false alarms before fire alarm telegraph operators at District headquarters trapped him through evidence recorded on a voice-record in the fire alarm bureau.

The culprit, a laborer in the Naval Research Laboratory (of all places!) was convicted in 1932 of turning in 37 false alarms and was committed to St. Elizabeth's Hospital after a lunacy hearing. He remained there until February 1937. In addition, in 1937, he served six months in jail for telephoning 10 false alarms.

Foreman's arrest followed a procedure set up by Joseph M. McInerney, fire alarm telegraph dispatcher. Telephone alarms to headquarters are recorded on a record-cylinder and the voices of both the citizen and the fire alarm operator may be played back. McInerney noted one voice responsible for several alarms and recalled the man who made the call identified himself in his initial call as "Foreman." To verify his suspicions, the operator telephoned Foreman and recorded his voice as it came over the wire. Checking both records proved the guilty one and Foreman was picked up. Police say Foreman told them he didn't know why he turned in false alarms—he only did so "when his head hurt him."

The Navy Department is conducting a separate investigation to determine if Foreman is responsible for a series of false fire calls originating in the Naval Research Laboratory. One wonders why on earth a man with his obviously rotten record was ever employed in such a responsible position to begin with!

* * *

Fire—But no Fire Sale

Out in Everett, Wash., three hundred women answering a hosiery advertisement were jammed into two lines in the city's largest department store.

Smoke swept up from the basement. The fire department was called and came on the double. It was only a small oil fire—lotta smoke, little blaze.

Not a woman budged out of the bargain line! (Thanks, E. R.)

* * *

Firebug on Wheels

Firemen and police of the Queens, N. Y. C., South Side have been working to catch an automobile thief who takes the cars he steals to a dreary vacant section of East Hamilton Beach and sets them on fire.

As a result of his work, the fire companies in the Richmond Hill section of the city have been compelled three times in as many days to rush to the spot to put out fires. Cute little hobby, eh?

* * *

Radio Has Its Uses

In Indianapolis, Mrs. Pearl Coffman took home what she thought was kerosene for a stove. Later, the filling station attendant discovered he had given her naptha. He didn't know her address.

Three police squads made a door-to-door canvass. Four radio stations broadcast warnings. The fire department was expecting the worst.

Finally a little girl told police: "The lady across the street has a coal-oil stove. Officers burst into the home stopping Mrs. Coffman as she started to pour naptha into the stove. Although Mrs. Coffman didn't hear the radio alarm, we understand the little girl did. Yes indeedy, commercial broadcast radio has its points. (Thanks Johnny Weisberger)

* * *

Hot Off the Tape

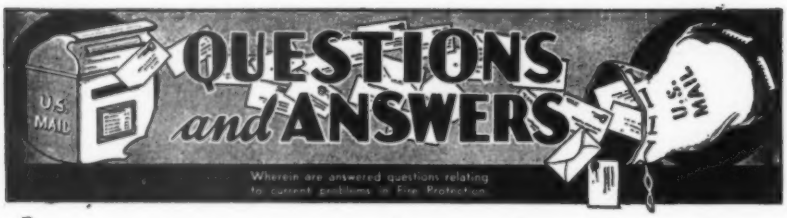
Firemen in the house of Eng. 1, Springfield, Ill., looking up from a card game saw a minor blaze riding right into their front door—the car of Navy Lt. C. Z. Steward, which had caught fire. . . . Water starts fire, yes indeed. Water dripped from a truck on a grease rack—just a drop or two. It struck an extension cord lamp bulb, which shattered, igniting nearby gasoline and the entire garage went up in flames. That happened in Grand Coulee, Wash. (Thanks J. W.). . . . In Charlotte, N. C., fire apparatus from three directions swarmed up to a corner, where smoke was rising from under the hood of a parked truck. A husky fire-fighter lifted the hood, took one look at the flames playing around the carburetor, bent over—and blew out the fire (Thanks Ed. R.., also for that yarn about fire destroying 3,000 chickens on Burnt Ranch, Ariz.) . . . . The Ohio State Fire Marshall prosecuted eight Akron, Ohio, dry cleaners on charges they violated the State fire code as to kind of cleaning fluid used, etc. . . . Firemen of Wisconsin cities have requested the state legislature to establish a 72-hour week. They've been working an 84-hour week. . . . Peter Rabidu, native musher, Anchorage, Alaska, pleaded innocent to a charge that he started nine forest fires which burned more than 250 acres. He said he built the fires because he fell in the river several times and the weather was cold. Now you tell one! . . . One of those particularly malicious false alarms was that received by Grady Hospital, Atlanta, Ga., that a train wreck had occurred near Conley, Ga., and injured at least 75 persons. The hospital notified the Atlanta police which dispatched 20 ambulances and a score of officers, all of whom rushed on the 40-mile wild-goose chase. . . . In Oklahoma City, Okla., Fire Chief George P. McAlpine was called out of church to answer a two-alarm fire. Then back to church he raced—to put out a fire in the Sunday School building. . . . Sixteen years ago Silas E. Briggs, Denver fireman, was killed in a fire truck collision. Last month, his son, Fire Captain William Briggs, 44, died of injuries received in a hook-and-ladder crash. (Thanks E. R.). . . . Out in Astoria, Ore., the alarm clanged, the City Brothers leapt into turnouts and action. But a phone call stopped 'em just as they were shoving off. "I often dream I'm in a fire," explained a sleepy naval officer. "Until now, I always remembered before turning in the alarm." . . . Lehigh University students, Bethlehem,

(*Continued on page 642*)

Eagle Hose's "Smoky Stover"

According to contrib' Edward Weaver, this vision of loveliness is the "Smoky Stover" of Eagle Hose and Chemical Company, York, Pa., otherwise known as Edward Deitrich, a member of the Company who is now serving in the Merchant Marine.

Looks like "Smoky" had just returned from a successful bout with no less than a grand piano, or somethin'!



Effect of Elevation of Line

To the Editor:

A pumper is on one side of a 50-foot hill, pumping through a 2½-inch line with a nozzle pressure of 50 pounds, over the hill to a fire on the other side. The nozzle elevation is the same as the pumper.

Would the nozzle pressure be the same as on a straight lay with a 1¼-inch tip?

J. A. S.

Answer: Where a pumper is pumping up over a 50-foot hill, and the nozzle and pump are at the same elevation, no additional power is required to raise the water over the hill.

If the two lines were laid, one over the hill and one horizontally, and each was the same length, had the same hose and nozzle diameters, and the same nozzle pressures, the engine pressures would also be identical.

In other words, as long as the pump and the nozzle are at the same elevation, and the other factors equal, it requires no more pump pressure in one case than in the other to maintain a given nozzle pressure.

Handling Chlorine

To the Editor:

What are the proper methods for the storage, handling and transportation of chlorine?

What is the explosion range of chlorine? B. F.

Answer: Below are general recommendations on the storage, handling and transportation of chlorine.

1. None but reliable and trained men should handle chlorine.
2. Avoid dropping or bumping chlorine containers.
3. Store containers in moderate temperature away from steam lines or fire.
4. Never connect a full container onto a header with other containers until their temperatures are approximately the same.
5. Keep caps on containers, except when in use, and replace when empty.
6. Close valve on container as soon as it is empty.
7. Containers must not be refilled except by permission of the owner and in accordance with Interstate Commerce Commission regulations. Even then it is dangerous and should be done only under technical supervision.
8. Never use container for any purpose other than to contain chlorine. Do not mix gases, allow moisture or air to get into containers; and never use containers as rollers or supports.
9. Never apply flame or blow-torch to container, and any cylinder placed so that it can be heated above 160 degrees Fahr. is dangerous.
10. Keep the valves closed at all times on all containers except when actually delivering chlorine.

Chlorine is not combustable in air, and is therefore not explosive. However, it reacts chemically with many common substances and may cause fire or explosion when in contact with them. Such substances include turpentine, ether, ammonia gas, illuminating gas, hydrocarbons, hydrogen, and finely divided metals.

Friction Loss, Comparison of Nozzles, Etc.

To the Editor:

I would appreciate the answers to the following questions.

1. A single 2½-inch line supplies two 2½-inch lines wyed off from it. In figuring the friction loss in this layout, do you figure the loss in the supply line or figure the loss in the combined lines.

2. What is the correct method of determining the friction loss in the following layout:

500 feet of 2½-inch hose equipped with 1-inch nozzle. N. P. is 50 pounds.

400 feet of 2½-inch hose equipped with ⅞-inch nozzle. N. P. is 50 pounds.

250 feet of 2½-inch hose with ¾-inch nozzle. N. P. is 50 pounds.

All lines have the same elevation as the pumper. Pumper is a 750 G. P. M. and takes water from hydrant with all lines working at the same time and no line is siamesed.

3. In some books I have noticed that it is stated that two ⅞-inch nozzles are equivalent to one 1¼-inch nozzle when lines are wyed off from a single line. Others state that two ⅞-inch nozzles are equivalent to one 1⅜-inch nozzle. Why the difference and how it is determined that two ¾-inch nozzles are equivalent to a 1 1/16-inch nozzle; two ⅞-inch nozzles equivalent to a 1⅜-inch; two 1⅛-inch equivalent to a 1⅝-inch; two 1¼-inch equivalent to a 1¾ inch; two 1⅝-inch equivalent to a 1 1/8 and two 1½-inch equivalent to a 2⅛-inch nozzle?

4. A single 500-foot line of 2½-inch hose is supplying two 150 foot lines of 2½-inch hose, equipped with 1-inch nozzles, wyed off from it. Nozzle pressure is 50 pounds. All lines are on same elevation as pump and take water from hydrant.

The correct pump pressure for this layout would be approximately 110 pounds, since there would be about 54 pounds friction loss in the supply line and wye while maintaining 50 pounds at the nozzle. Please advise if I have figured correctly on this layout. O. H. S.

Answer 1: In figuring the friction loss in a branched layout, the layout is first converted to a single line of hose and then the friction loss figured on the basis thereof.

Answer 2: First find the discharge from the nozzle, which will be the flow through the line.

Discharge $= 29.7 \times d \times d \times \sqrt{P}$, where d is the nozzle diameter in inches, and P, the nozzle pressure.

For a 1-inch nozzle at 50 pounds pressure, discharge $29.7 \times 1 \times 1 \times 7.07 = 210$ gallons per minute.

Friction loss in 100 feet of 2½-inch hose $= 2 \times Q \times Q + Q$, where Q is the flow in hundreds of gallons per minute.

In this problem, Q is 2.1.

Then the friction loss per hundred feet is $2 \times 2.1 \times 2.1 + 2.1 = 10.9$, or 11 pounds approximately.

Friction loss in 500 feet would be five times as much, or 55 pounds.

The discharge from a ⅞-inch nozzle at 50 pounds is 161 gallons per minute.

The friction loss in a hundred feet of 2½-inch hose at 161 gallons per minute is 6.6 pounds.

The friction loss in 400 feet would be four times as much, or 26.4 pounds.

The discharge from a ¾-inch nozzle at 50 pounds pressure is 118 gallons per minute.

The friction loss per 100 feet of 2½-inch hose carrying 118 gallons per minute is 4 pounds. The friction loss in 250 feet will be two and one-half times four, or 10 pounds.

Answer 3: When you are to find a single nozzle equivalent to two or more nozzles, all you do is to compare the cross-section areas of the nozzles.

Thus if we were to find what size nozzle was equivalent to two 1-inch nozzles, we would find the cross-section area of a single 1-inch nozzle, multiply by 2 and then find the nozzle having an area nearest to this amount.

So that you will be able to make your own comparisons we give below the area of nozzles of different sizes.

Nozzle	Area	2 × Area
¾	.44179	.88358
⅞	.60132	1.20264
1	.7854	1.5708
1 1/16	.994	1.988
1¼	1.2272	2.4544
1⅜	1.4849	2.9698
1½	1.7671	3.5342

Nozzle	Area
1⅛	.8866
1⅜	2.0739
1¾	2.4053
1⅞	2.9482
2⅛	3.5466

When calculating the combined areas of the nozzles, you may not find a nozzle having an area exactly equal to the two smaller nozzles. In this case you take the nozzle which has an area nearest to the sum of the areas of the smaller nozzles.

You will note from the first table above that two ⅞-inch nozzles have an area equal approximately to one 1⅛-inch nozzle. Therefore we say that the two ⅞-inch nozzles are equivalent to a 1¼-inch nozzle.

Answer 4: In this problem we first combine the two 150-foot lines of 2½-

(*Continued on page 624*)

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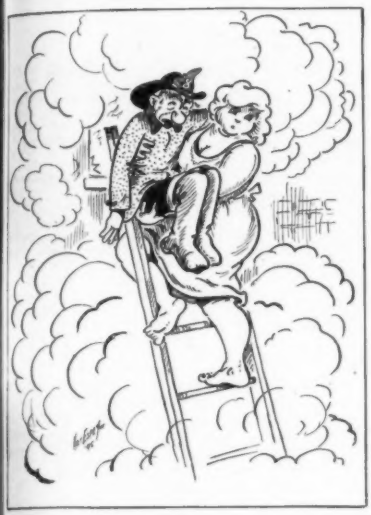
FALSE ALARMS



Not So Smart

They tell of a man who came upon a pal poring over a chessboard. Opposite him sat a dog.

"Hey, what's going on?" asked the caller.

"Just playing chess with my dog," replied the pal.

"You're kidding! Whoever heard of a dog playing chess!"

"You're not only hearing — you're watching one play." And he made a move which the dog pondered, then countered.

"Well, I'll be blowed!" exclaimed the dropper-in. "That's the smartest dog I've ever seen!"

"Oh, I don't know about that," replied the player; "I've beaten him four out of five games."

Never Mind the Change

Those who have seen the freedom with which American troops spend money will enjoy this story from India.

An American, having hired a tonga for a distance the ordinary fare for which would be half a rupee, magnanimously handed the driver a 50-rupee note.

The man shook his head violently and demanded 60.

"No," said the American, "that's enough. I shan't pay any more."

The Indian thereupon accepted the money and walked away, leaving the tonga and pony with the purchaser.

Fireman's Lament

I'm all done with dames,
They cheat and they lie,
They prey upon us males
To the day that we die.
They tease and torment us
And drive us to sin. . . .
Say!—lookit that blonde
That just came in !!

"What's the matter with Scotty? He seems upset."

"Oh, he just got a shine and then remembered he had his room-mate's shoes on!"

My Hero

"Darling Daisy," wrote Clem to his beloved, "I would swim the mighty ocean for one glance from your dear eyes. I would walk through a wall of flame for one touch of your little hands. I would leap the widest stream for one word from your lovely lips. As always, your Clem."

"P. S.—I'll be over Saturday night if it doesn't rain."

Scandal

A prominent business man fell in love with an actress and decided to marry her, but for the sake of prudence he employed a detective agency to prepare a report on her life.

The operative's report read: "The lady has an excellent reputation, her past is without a blemish, and she has a circle of impeccable friends. The only breath of scandal is that lately she has been seen a great deal in the company of a business man of doubtful reputation."

"If your looking for my husband, he's gone fishing. Just walk down to the bridge until you find a pole with a worm on each end."

Along with the old shoes tied on the back of the newlyweds' car was a sign which read: "Amateur Night."

A Different Outlook

"At her request you gave up drinking?"

"Yes."

"And you stopped smoking for the same reason?"

"I did."

"And it was for her that you gave up dancing, card parties and billards?"

"Correct."

"Then why didn't you marry her?"

"Well, after all this reforming I decided I could do better."

The drill sergeant was putting the rookie squad through calisthenics. "Companeeee, lift up your left leg and hold it straight out in front of you."

By mistake, one soldier held up his right leg, which brought it side by side with his neighbor's left leg.

"Aw right," shouted the sergeant when he noticed this, "Who's the wise guy over there holding up both legs?"

"How dare you swear before my wife?" demanded the indignant husband.

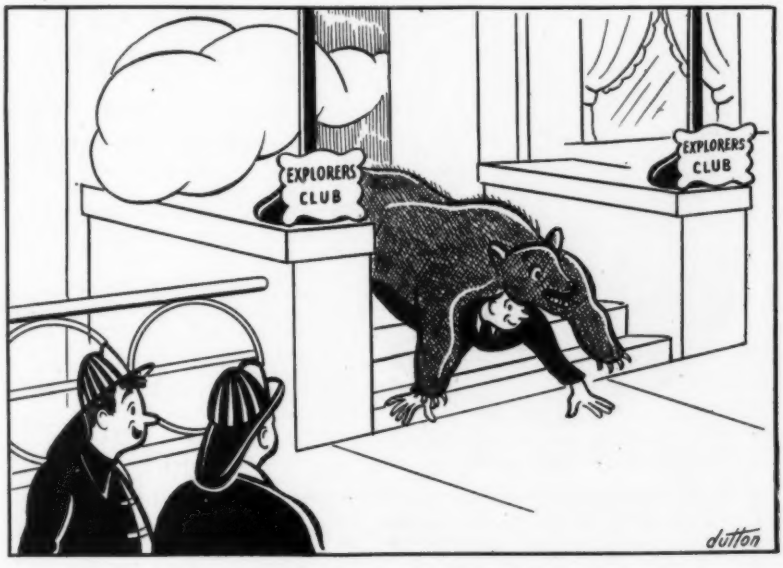
"I am very sorry," replied the intoxicated man, "I was unaware that your wife wanted to swear first.

Friend: "So now you and your son are carrying on the business together?"

Owner: "Not exactly. I run the business, and my son does the carrying on."

Conscious of It

Hard boiled captain: "Your name?"
Timid private: "Jones, sir."
Captain: "Your age?"
Private: "Twenty-four, sir."
Captain: "Your rank?"
Private: "I know it, sir."



"Here Comes Richardson—Anything for a Laugh!"

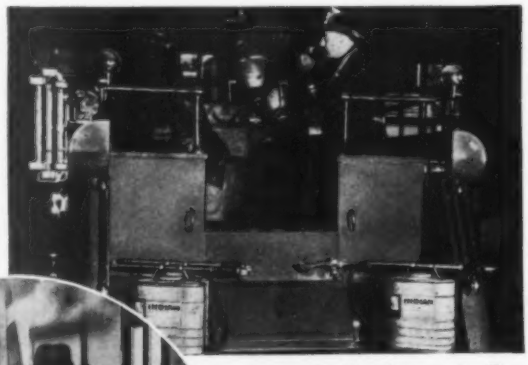
YOU CAN DEPEND ON IT!

INDIAN FIRE PUMPS are always in the thick of the fight!

No matter how hot the fire fighting job, *INDIAN FIRE PUMPS* always give a good account of themselves. Roof fires, building fires, rubbish fires, grass fires, awning fires, room fires and many others can be handled with *INDIAN FIRE PUMPS* alone — no need to lay hose. They have a different use every day.

CLEAR WATER DOES NO HARM

Clothing, house furnishings, etc., are not damaged by the stream of clear water from an INDIAN FIRE PUMP. No injurious chemicals used. Big rustproof tank holds 5 gals. and easy pumping throws 30 to 50 ft. pressure stream.



Carrying racks available for use on trucks and cars.

"Best Equipment Any Department Can Have"

D. B. Smith & Co.
Utica, N. Y.

I would like to inform you we have four *INDIAN FIRE PUMP* tanks in our Department and think they are the best pieces of equipment any Department can have. For small trash and grass fires I would not want any better piece of equipment than *INDIAN FIRE PUMPS.*

CARL W. EVANS, *Fire Chief*

Write for Full Details

D. B. SMITH & CO., 406 Main St., Utica 2, N. Y.

PACIFIC COAST BRANCHES:
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Carco-Conwhit Co., 520 S.W. Pine St., Portland 4, Oregon
The Conwhit Co., Klamath Falls Oregon
Mill & Mine Supply 2700 4th Ave. So. Seattle, Wash.

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Rates are inexpensive. "For Sale," "Proposal" and "Wanted" advertising, $5 per inch insertion (10% discount allowed for three or more consecutive insertions). FIRE ENGINEERING, *24 West 40th Street, New York 18, N. Y.*

WANTED

Fire Equipment Supply Companies, to sell Morning Pride Protected Rubber Firecoats, with Wing Sleeves, Chest Protector, Face Protecting Collar, Wool Wristlets, Double Shoulders, No Dirt Pockets. Also Firepants and Mitts. Write Morning Pride Mfg. Co., 1986 Home Ave., Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

AGENTS WANTED

To sell High Grade line of Fire Protection Equipment and Fire Department Supplies. Good Proposition. Write: SCHWARTZ BROS., Inc., 731-33 Filbert St., Philadelphia 6, Pa.

Established over 37 years.

REPRESENTATIVES WANTED

Several territories open for representatives for the sale of fire apparatus. Write Box 25, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, New York.

WANTED

1000-1500 ft. of 3 inch used fire hose with or without couplings. Write quoting price, number of ply, manufacturer, age and condition to A. F. Roe, P.O. Box 44, Ouray, Colorado.

POSITION WANTED

New England Fire Captain—retired—(Civil Service). Capable of sales—demonstration—surveys for fire protection.

Capable of taking charge of plant protection—or growing community.

Write Box 60, c/o Fire Engineering, 24 West 40th Street, New York, N. Y.

WANTED SALES MANAGER

Wanted at once by fire apparatus manufacturer, first-class Sales Manager. Only first class and experienced need apply. Write Box 55, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

FOR SALE

Leaderline Sets, 200 ft. 1½" d.j. fire hose, water thief, 2 combination nozzles, Fog or straight stream or shutoff, complete for $199.00 prepaid. Hose only 75c. per ft. Doray Fire Equipment Company, 1924 Valley Drive, Syracuse, N. Y.

SALESMAN WANTED

NEW YORK STATE. To sell complete line of fire equipment including trucks. Commission basis. Address: Box 50, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

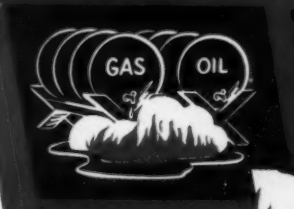
Floafome

FOAM TYPE

SMOTHERS FLAME WITH A BLANKET OF FOAM!

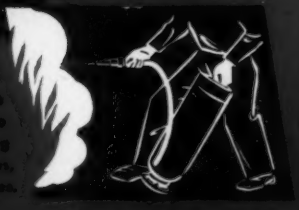
Covering flame with a fireproof cloak, Floafome provides swift, three-way action — smothering, cooling, and insulating against re-ignition. It produces approximately 22 gallons of tough, durable foam when inverted. It has an effective range of 40 feet. Constructed with exclusive Sure Sweat seam.

WHERE TO USE Floafome



Use on Class A and B fires — against gasoline, oil, grease, textile, paint, chemical, flammable liquid, paper, wood, and alcohol fires.

Direct nozzle; invert extinguisher. For fires in liquids allow foam to fall lightly on burning substance. For other fires, aim at base of flames.



HOW TO USE Floafome

NOW IN COPPER!

Available at last—this popular extinguisher is back in handsome, durable copper.

THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

Distributors in principal cities

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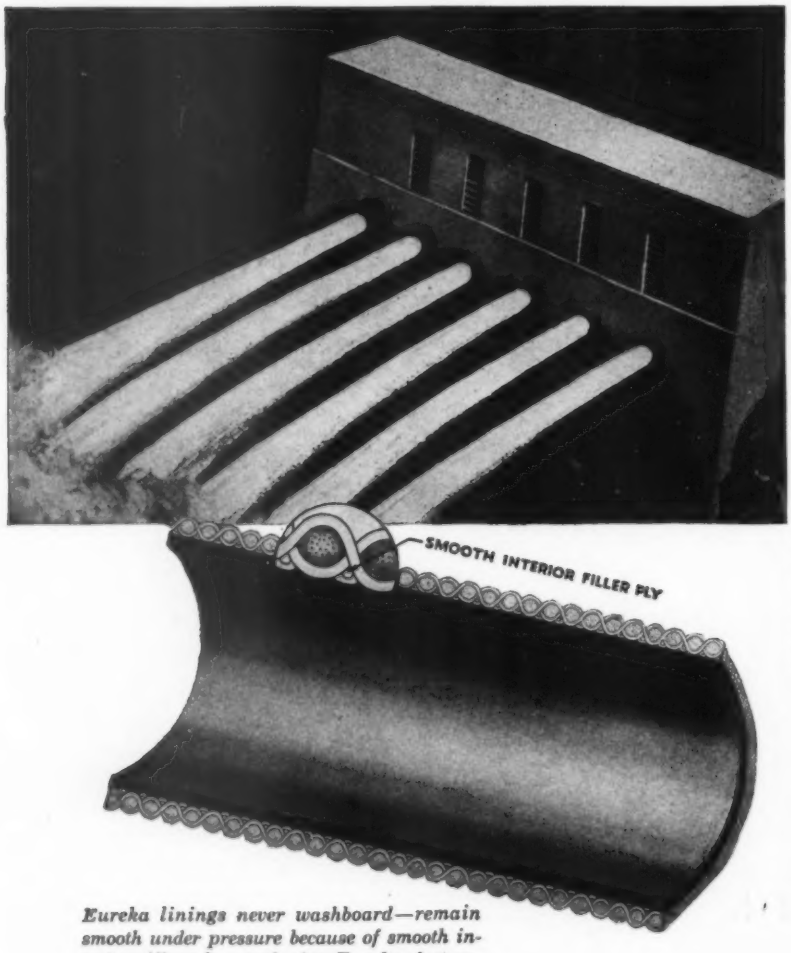
Let General Protectioneers prescribe the right

SMOOTH WATERWAY
INCREASES NOZZLE PRESSURE



Eureka linings never washboard—remain smooth under pressure because of smooth interior filler-ply—exclusive Eureka feature.

The SMOOTH-INTERIOR FILLER-PLY woven into Eureka Fire Hose streamlines the inner jacket. Consequently there are no valleys into which the rubber lining can recede when pressure forces the lining against the jacket. In Eureka streamlined fire hose you are always sure of a smooth waterway...minimum friction loss...maximum nozzle pressure.

For greater protection to lives and property specify

EUREKA FIRE HOSE

Division of **United States Rubber Company**

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NOTICE

The Comptroller of the City of Norwalk will receive bids at his office in the City Hall, South Norwalk, Connecticut, until 5:00 o'clock P.M. September 3, 1945 for the furnishing of an eighty-five (85) foot aerial ladder, with or without cab, completely equipped.

The Comptroller will also receive separate figures for the following additional equipment.

Booster Tank
¼ Fold Life Net
Ladder Pipe

Complete specifications must accompany each bid. Dated at Norwalk, Connecticut this 23rd day of July, 1945.

Stephen Dokus
Comptroller

WANTED
DISTRIBUTORS DEALERS AGENT

Attractive sales opportunities open for aggressive organizations or individuals engaged in fire department supply business. The product is "HOSETREAT" a scientifically prepared solution, comparable to wax and gum now extensively used by fire hose manufacturers, to eliminate water absorbtion and resultant freezing in cold or mildew in warmer climates. The merits of "HOSETREAT" and sales possibilities are proven, earnings above average and protected territory possibilities. Write in detail stating territory covered and all information that will aid us in making selections. Inquiries also solicited from Exporters. Box 45 c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Texas Firemen's School Convenes

The Sixteenth Session of the Texas Firemen's Training School was held at the A. and M. College of Texas, College Station, Texas, May 27 to June 1, 1945, with an enrollment of 505, representing 302 cities, posts and stations in Texas and 13 other states. Student firemen and fire marshals from 65 Army, Navy and Air Forces Stations participated in the training.

Four courses were conducted concurrently: Basic Course for firemen, Fire Marshals, Fire Department Instructor Training, and Lay Instructor's First Aid, according to H. R. Brayton, Director of the School, who states also that this year emphasis was placed on the Fire Marshal's course on fire prevention activities. Highlights of the session were: Demonstration of airplane crash fire fighting by three crews, furnished by the Army Air Forces Central Flying Training Command. Another demonstration of transportation and distribution of butane followed by a three hour discussion session of "Education, Engineering, and Enforcement" with respect to liquified gases.

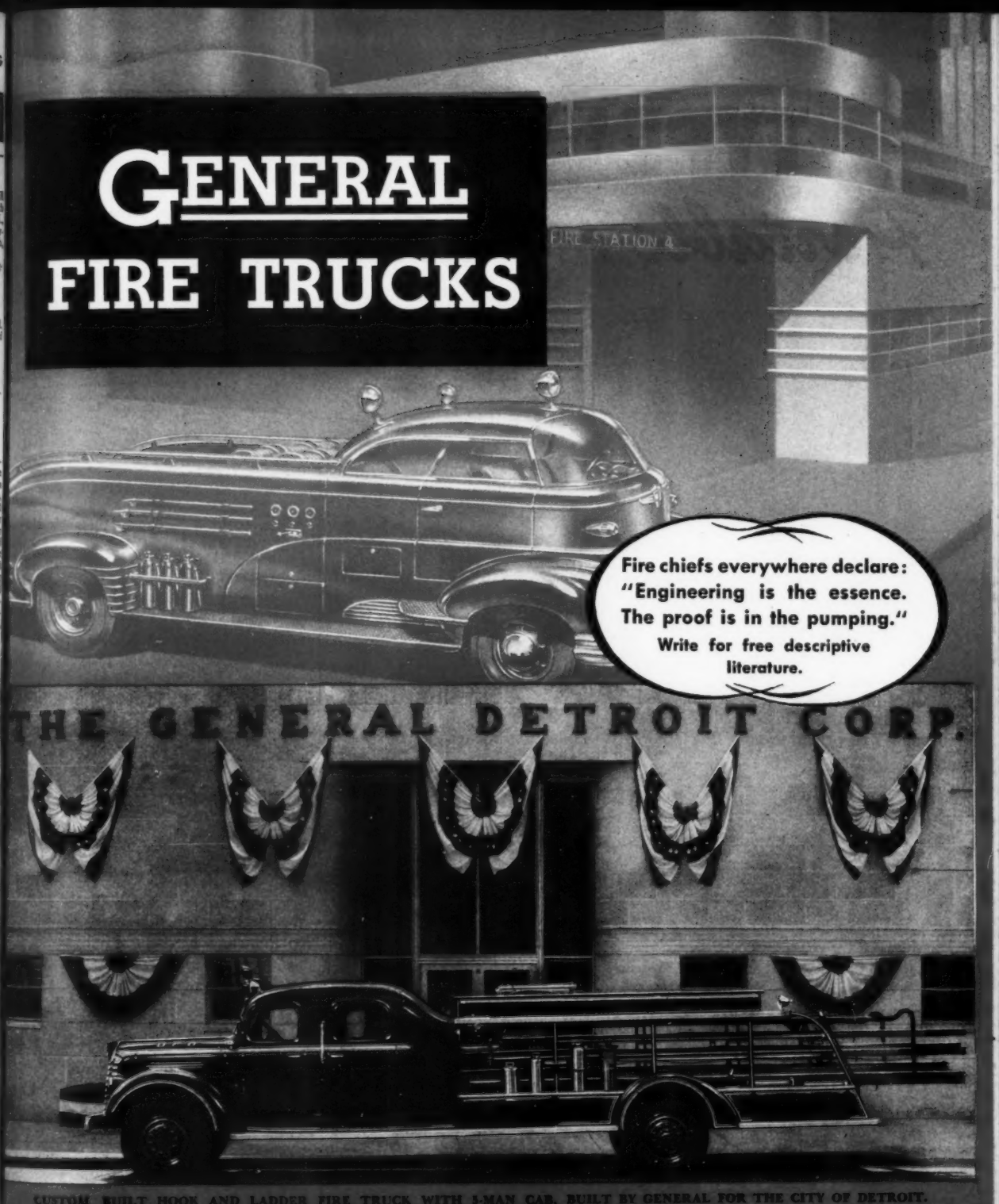
After nearly four years in the Army as Lieutenant Colonel in the Chemical Warfare Service, Prof. Brayton has taken over his old duties including that of the State Firemen's Training School.

Mid-Hudson, Harlem Valley Chiefs Meet

A demonstration on low-pressure fog by the Rockwood Fog Nozzle Co. on oil, house and automobile fires featured the June 13th meeting of the Mid-Hudson, Harlem Valley Fire Chiefs' Assn. at Rhinebeck, N. Y.

Chief Paul P. Heinz of New Haven, Conn., showed colored motion pictures of his department.

GENERAL FIRE TRUCKS



Fire chiefs everywhere declare: "Engineering is the essence. The proof is in the pumping."
Write for free descriptive literature.

CUSTOM BUILT HOOK AND LADDER FIRE TRUCK WITH 5-MAN CAB, BUILT BY GENERAL FOR THE CITY OF DETROIT.

THE GENERAL FIRE TRUCK CO.

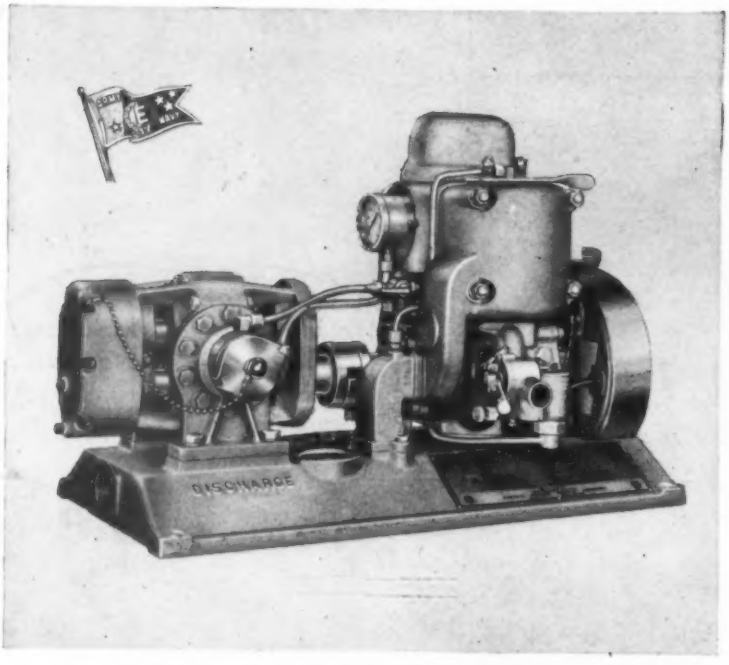
DIVISION OF THE GENERAL DETROIT CORPORATION

Manufacturers of Motor Fire Apparatus, Fire Extinguishers, and Allied Products

New York — 2272 E. JEFFERSON, DETROIT 7 — Chicago

West Coast Affiliate: THE GENERAL PACIFIC CORP., 1800 S. HOOPER ST., LOS ANGELES — San Francisco — Seattle

TYPE "Y"
Portable Pumper



While the major part of our manufacturing effort still is confined to production for the Navy, we once again are able to produce a limited quantity of our highly specialized fire-fighting Type "Y" Portable Pumpers for the forestry service, industrial plants and commercial shipping.

For weight and size, Pacific Marine Type "Y" is the most powerful portable pumper yet built. Base, 24 x 12 inches; height, 13 inches; net weight complete, ready to operate, 70 pounds.

CAPACITY

Pressure	100	125	150	175	200	225
Gallons per Minute	63	59	53	46	40	20

Manufactured by the
FIRE-FIGHTING EQUIPMENT DIVISION *of the*
PACIFIC MARINE SUPPLY COMPANY
SEATTLE, Washington

What's Burning

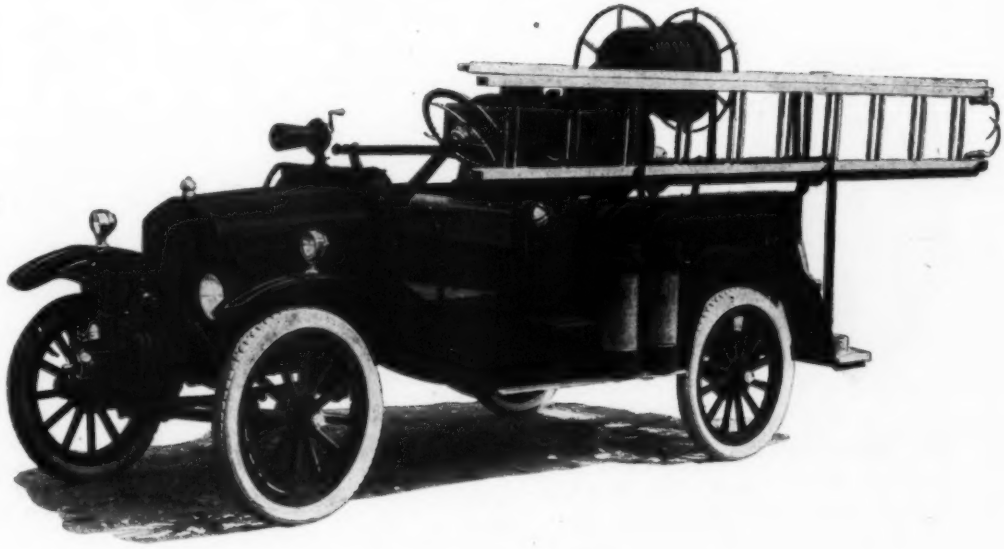
THE following list includes fires of $10,000 loss and over in the United States and Canada, for the month of July, 1945. These figures compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred.

Month Ending July 31

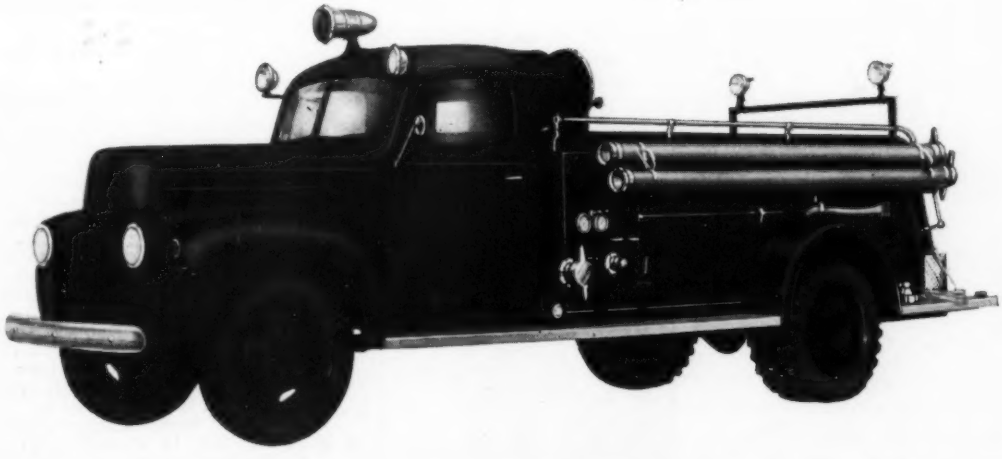
El Monte, Cal.—El Monte recreation center, consisting of bowling alley, cafe and bar, damaged.
Horseheads, N. Y.—Dean and Lee Feed Mill destroyed. Lightning.
Lowell, Mass.—Merrimack Hotel damaged.
Deep Brook, N. S.—Physical and recreation training school, M. C. S. C. Cornwallis, damaged.
Hamilton, Ont.—Imperial Greece Coffee & Spices Co. damaged.
Klamath Falls, Ore.—Bratton packing plant destroyed.
Reardan, Wash.—Feiss Grain Elevator destroyed.
Clinton, Ia.—Franklin Press job printing plant and adj. Swing tavern destroyed.
Oswego, N. Y.—Office and storage bldg. of Earl O'Brien Lumber Co., a nearby grocery store and vacant dwelling destroyed. Lightning.
Wenatchee, Wash.—Ramstad salt plant destroyed.
Moscow, Ida.—Washburn Seed Co. destroyed. Cause, combustible dust.
Wapakoneta, Ohio.—Main plant of Bryant Manufacturing Co.
Brockton, Mass.—Howard grammar school bldg. damaged.
Billings, Mont.—Great Western Sugar Co. factory destroyed.
Los Angeles, Cal.—National Machine Products Co. plant damaged.
Clifton, N. J.—Mycalex Corp. of America, mfrs. of glass-bonded mica for radios, destroyed.
Memphis, Tenn.—Bldg. occupied by George F. McFadden & Bros. cotton company; George's Cafe, Memphis Air Conditioning Co.; Barbecue Shack; A & S Liquor Store and a barber shop damaged.
Murfreesboro, Tenn.—Princess Theatre destroyed.
Grand Island, Neb.—Bldg. occupied by Stryker's flower shop and other businesses, adjoining Royal Chocolate Shop and the H. & S. shoe store, destroyed.
Orange, N. J.—Bldg. of George Rutlege Co. war plant destroyed.
Sylvan Beach, N. Y.—Dicastro's Hotel and Silver Queen Tavern at Oneida Lake resort destroyed.
San Antonio, Tex.—Joske Bros. dept. store warehouse damaged.
Richmond, Va.—Hippodrome Theatre destroyed.
Westville, N. S.—Westville United Church destroyed. Incendiary.
Sonora, Cal.—Pickering Saw Mill Co. damaged.
Marrero, La.—Office and loading platform of Clark's Super Gas Co. destroyed. Explosion.
Portland, Ore.—Spokane, Portland & Seattle Railway storage tank destroyed. Grass fire.
Sarnia, Ont.—Cruise ship Hamonic destroyed.
Birmingham, Ala.—Warehouse owned by Central of Georgia Railroad, occupied by Birmingham branch of Simmons Mattress Co. and Jefferson Home Furniture Co., damaged.
Brazil, Ind.—Hickory mine, 350 tons of coal conveyors and shaker screens, several tractors and trucks destroyed.
South Somerset, Mass.—Montaup Electric Co. KVA transformers damaged.
Akron, Ohio.—Hudson Co.'s lumber yards damaged.
Toronto, Ont.—Garage of Toronto Fuels, Ltd., damaged.
Oakland, Cal.—Breuner Furniture warehouse, 226 refrigerators and 12 trucks destroyed.
Lexington, Ky.—Smith-Haggard Lumber Co. planing mill damaged.
Glasgow, Ky.—Cleo Bartley Lumber Co. plant damaged.
Tillamook, Ore.—A. F. Coates Lumber Co. destroyed. Forest fire.
Houston, Tex.—Main-Fannin-Rusk-Walker business block damaged. Cigarette.
Vancouver, B. C.—Garage and trucks of Mainland Transfer Co. damaged.
Universal City, Cal.—Six acres of film sets and bldgs. at Universal Pictures Studio, including barn containing Tom Mix relics destroyed.
Somers, Conn.—Barn owned by John Gerich and George Ronaldson destroyed. Lightning.
Vancouver, B. C.—Walter Moberly School in Fraser district damaged. Incendiary.
Port Moody, B. C.—Moody Shingles, Ltd., plant destroyed.

23 YEARS of PROGRESS

— From 1922 —



— To 1945 —



Barton-American Front and Midship Mounted Pumps

Can be mounted on any standard chassis—available with conventional capacities and pressures—also units for high pressure fog.

AMERICAN-MARSH PUMPS, INC.

CENTRIFUGAL, TURBINE, STEAM, AND POWER PUMPS

BATTLE CREEK, MICHIGAN — *PUMPS AND PUMPS ONLY SINCE 1873*

BRAXMAR BADGES

Standard for over 66 years

NOW

WE CAN GIVE YOU AN EVEN BETTER BADGE

WE believe you should buy a badge now because we can now offer you badges of sterling silver, sterling silver gold plated, rolled gold on sterling silver and 14 karat gold. The finest badges you have ever been able to buy, and at only a few cents over the cost of ordinary badges.

Our blue catalog is the last available for the duration. If you do not have new price list as of July, 1943, we will be glad to mail you our latest price list. As we cannot publish a new catalog we have a circular illustrating the most popular fire badges, which we will be glad to mail upon request. (No auto plates for the duration—no catalogs for the duration.)

JOHN O. VEIT
President

BRAXMAR BADGES

Standard for over 66 years
C. G. BRAXMAR CO., Inc.
242 W. 55th St., New York 19, N. Y.

Atlanta, Ga.—A hangar and 19 planes of Southeastern Air Service at Atlanta municipal airport destroyed.
Gravenhurst, Ont.—Beaumaris Hotel destroyed.
Vancouver, B. C.—Terminal City Ironworks damaged.
Rogers, B. C.—Planer mill destroyed.
Los Angeles, Cal.—Chemistry laboratories of Science Hall on University of Southern California campus damaged.
Hagerstown, Md.—D. Ramaciotti's garage, Bilkle's shoe shop, Hoffman's haberdashery, Leiter Bros. dept. store and Bon Ton women's store damaged.
Peck, Mich.—Peck Oil Co.'s four storage tanks, containing 41,000 gallons of gasoline, kerosene and fuel oil, destroyed.
Middletown, N. J.—Main office of H. W. Huber Co., Inc., manufacturers of printing inks and carbon blacks, near Navesink, destroyed.
Hamilton, Ohio.—Factory bldg. owned by Mrs. Bernard Hirschorn destroyed.
Milwaukee, Wis.—Plankinton Arcade bldg. in downtown section damaged.
Jacksonville, Fla.—Wharf and warehouse of St. Johns River Line Co. damaged.
Philadelphia, Pa.—Barn and adj. creamery on West Pike, near Newton Square, destroyed.
Martinez, Cal.—Shell Oil Co. warehouse damaged.
Lafayette, La.—Ice plant of Louisiana Public Utilities and a bldg. owned by the utility company in which were housed cold storage vaults and milk-cooling establishment, destroyed.
St. Paul, Minn.—Neisner Bros., Inc., store damaged.
Cheriton, Va.—G. L. Webster Co.'s warehouse and cold storage plant damaged.
Indianapolis, Ind.—Climax Machinery Co. damaged.
Prineville, Ore.—Alexander Yawkey Lumber Plant destroyed. Chain friction.
Eugene, Ore.—Bartle Court Apartments destroyed.
Darlington, S. C.—Planing mill and its machinery of the Daniel Lumber Co. destroyed. Switch in an electric motor.
New York, N. Y.—Empire State bldg. damaged. Airplane crash.

Correspondence

Where Credit Is Due

To the Editor:

Your splendid editorial "Credit Where Credit Is Due" is most timely, but I fear that you are a voice crying in the wilderness.

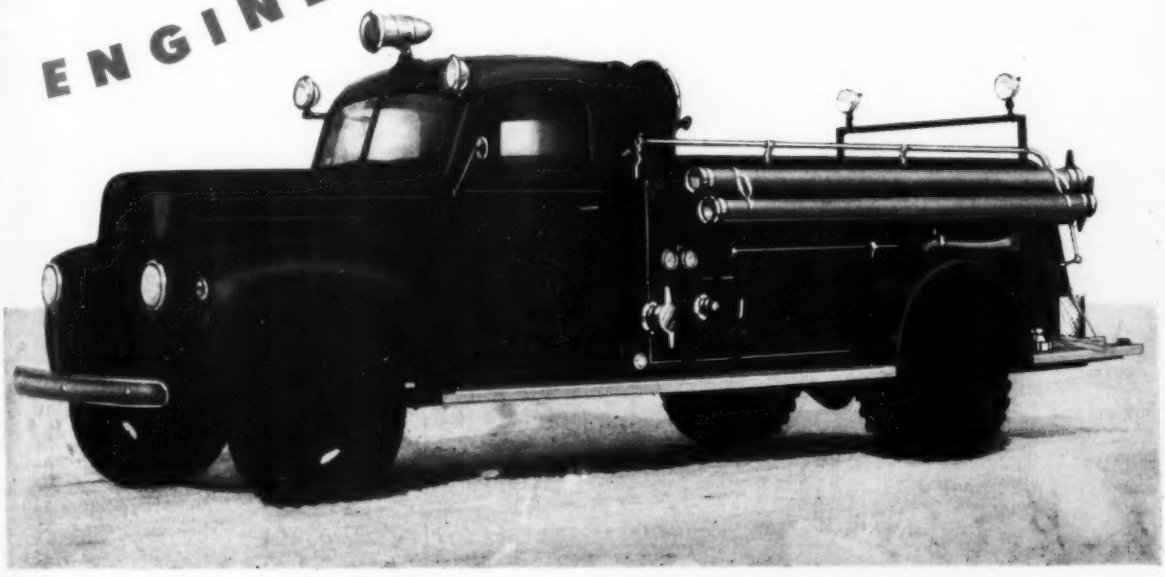
I had occasion recently to attend a Memorial Service for volunteer firemen who had died in the service of their country or their community. Here, if ever, was a golden opportunity to eulogize a valiant Service, yet seldom have I heard so worthy a cause damned by such faint praise.

The good minister—he seems to be doing his best—could think of little to say beyond the fact that the men by devoting some of their time, as the occasion arose, to the good of the community without financial remuneration were complying in general with the best Christian precepts, but, His Reverence hastened to add, this was not enough. After that he was on home ground and the Fire Service was subordinated to a discourse on Christian conduct.

The fault, I am afraid, lies with us. Somehow we have failed to bring home to the public the drama, the adventure and the tragedy that is woven so inextricably in the life of the Service. They do not know the price in toil and sweat and at times in blood and tears that must be paid by those who serve. They do not see the countless acts of courage, fortitude and heroism that are hidden from them by a pall of smoke and crumbling walls. They are not moved to cheers at the sight of firemen jostling each other to enter a doorway that a few minutes earlier had spewed forth a herd of panic stricken civilians scurry-

AMERICAN FIRE APPARATUS

ENGINEERED FOR SERVICE



AMERICAN FIRE APPARATUS has always stood squarely for one thing—sound engineering to insure dependability. Today, American apparatus is used extensively by the armed forces and by thousands of fire departments—proving the value and success of that policy. American sales engineers offer you years of experience in selecting, from a wide range of equipment, the best for your particular fire-fighting needs. Modern, trim, compact American fire trucks are built around the best pumps in the industry. Any piece of American apparatus you recommend will be a credit to you and your department for years to come.

STRATEGICALLY LOCATED FOR SERVICE!

A glance at the map at the left will show why American can give you fast and efficient service. Located in the geographic center of the fire-fighting equipment manufacturing district, American can draw parts and supplies from comparatively short distances to meet the ever increasing demand for standard and special built American Fire Apparatus.

Ask for our new booklet showing our various models in color.

American Fire Apparatus Co.

BATTLE CREEK, MICHIGAN

ing to safety in the opposite direction. They do no special honor to the men who daily risk their lives in the service of their fellowman and yet it is written "Greater love hath no man than this, that a man lay down his life for his friends." To the public this is just part of a fireman's job. He is paid to do it and he is no more than earning his money. No wonder the poor minister could find virtue only in the fact that these particular men had served without pay.

More power to you in your crusade, but I am afraid that we of the tribe of Abou Ben Adhem must remain the unsung heroes of our time.

HUGH MCNAIR.

New York, N. Y., June 1, 1945.

Acid in Hose

To the Editor:

I noticed in the June, 1945, issue your answer to M. F. T. regarding acid forming in fire hose. In my opinion, you have left out the most important part of the problem. It has conclusively been proven that acid does form in the inner tube when not properly drained. I have never been aware of its forming on the outside of hose that has been properly washed and dried.

To our sorrow we learned this happens the hard way. The thing that you did not bring out is that when hose is rolled and some water is left in it almost chemically pure sulphuric acid forms. The damage is done, however, in loading the hose. In other words, as the hose is loaded the acid is spilled on the floor and the cotton jacket is dragged through the acid. We have eliminated this by building hose towers in each station. This can be done at very little expense by cutting the floor joists, floor, and ceiling; installing a header and enclosing the upper portion to make a tower and bolting the pegs to the wall. This has positively eliminated all our acid trouble.

Sincerely yours,
CHARLES L. SLADE,
Chief, Des Moines, Ia.

Apprehending False-Alarmers

To the Editor:

That yarn you ran in June about catching false-alarmers with invisible powder and infra-red light is all pretty good, but, for the record, the same general idea was worked out some time ago.

In Maine, red indelible liquid was placed on fire alarm hooks in a suburb of Portland by firemen, by means of which they brought into the the hands of the law a 22-year-old youth who, according to police, finally admitted sounding many of the 38 false alarms that had been recorded in that area in approximately 30 days.

The youth, whose hands were covered with the unwashable liquid, was dashing from a fire alarm box in a certain district late at night when he was taken into custody.

I don't know what ever happened to the youth, or the idea, but you'll find it written up in the papers of November, 1942. J. W. C., Beverly Farms, Mass.

Wet and Dry Drills

To the Editor:

While perusing the December, 1944 issue of your magazine, one article in particular caught my attention.

On your "Questions and Answers" page, your answer regarding "Wet and Dry Drills," in part where you state "We have never heard of opening and closing hydrants as being the cause of bursting of service lines, etc." interests me more than casually.

It is the policy of the Los Angeles County Fire Department to instruct its personnel to close hydrants slowly. We have experienced mains bursting and have attributed the cause chiefly to the fact that water was shut off too quickly. This has invariably occurred where inexperienced employees were used in flushing hydrants.

Standard type hydrants are used on this department.

I would appreciate very much a more detailed discussion on the preceding if it is at all possible. A "Round Table" discussion on it would prove of inestimable value I am sure.

WM. H. WEYANT,
Capt. Eng. Co. 38
Los Angeles County Fire Dept.

Editor's note:

Since our answer regarding "Wet and Dry Drills" was published, we have received additional information that confirms Captain Weyant's experience showing the closing of hydrants will create a water hammer unless care is exercised to slowly complete the closing of the hydrant.

TIME PROVEN

Time has proven that wherever the Acme Type "FD" FULL VISION All-Purpose Gas Masks are used, they are popular with firemen. There is NO Distortion of the FULL VISION and the Acme Masks are Bureau of Mines Approved. Protects against Carbon Monoxide, Organic Vapors, Acid Gases, Ammonia Fumes, Toxic Smokes, and Smoke Suffocation.

WRITE FOR ILLUSTRATED FOLDER and PRICES

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address: ACMEPROCO PITTSBURGH, PA., U.S.A.

Now FOG AT 60 LBS.

The UNIVERSAL NOZZLE

NEW ENGINEERED DESIGN
HIGH VELOCITY or LOW VELOCITY FOG
GREATLY IMPROVED
SMOOTH—EASY TO OPERATE
RUGGED CONSTRUCTION

INDEPENDENT FOG

INDEPENDENT SOLID STREAM

COMBINATION FOG AND SOLID STREAM

Manufactured and Distributed by

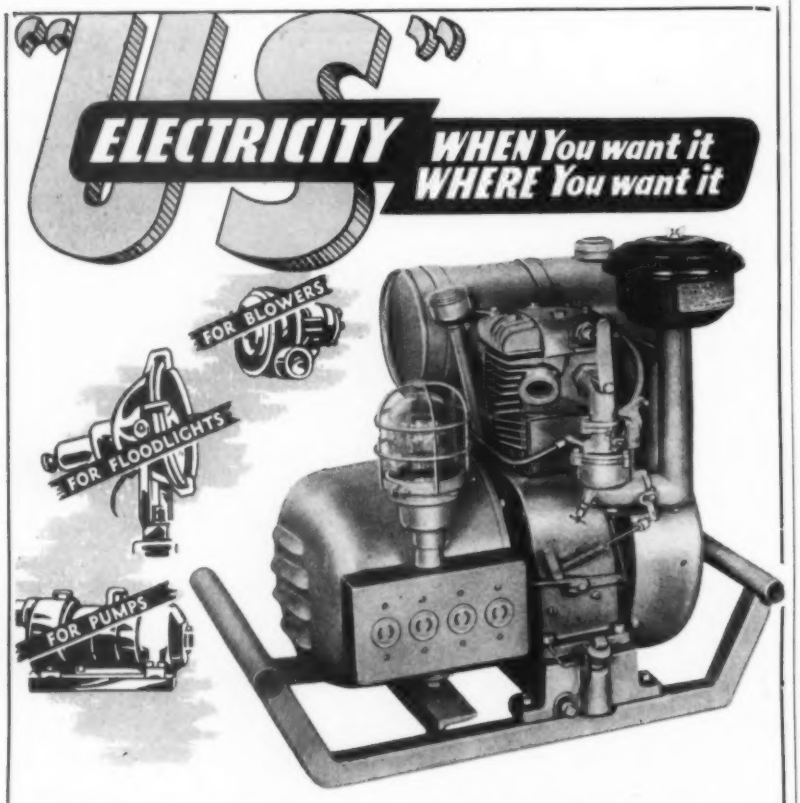
L. N. CURTIS AND SONS

451 Hudson Street **Oakland 9, California**

The standard type fire hydrant requires from fifteen to twenty full turns of the valve stem to fully close it. Approxmiately two-thirds of these turns of the valve stem can be made before the reduction in the opening through the hydrant valve will be sufficient to necessitate a slow closure for the remaining turns on the hydrant to prevent substantial water hammer.

If a hydrant is at the end of a very long line of pipe, even a very slow closure of the hydrant may materially increase the water pressure. A rather extreme example of this condition is reported in WATER WORKS ENGINEERING in the April 26, 1939, issue, page 503. On a 16,000 foot, ten-inch water main, laid to supply an airport, water hammer was very noticeable when the hydrant at the airport was closed. Pressure in the main was seventy-five pounds normally, and when a hydrant was opened this pressure dropped to twenty-five pounds. It was found that even if the hydrant was closed very slowly, the pressure due to water hammer would rise to 150 pounds. A four-inch top valve was placed on this main and thereby the rise in pressure when the hydrant was operated was kept down so that the pressure would only go up to about 90 or 100 pounds.

Captain Weyant's suggestion of inviting more discussion on this subject is appreciated and may be followed at a later date in a Round Table survey on the subject.



Built to exacting requirements—to fire department specifications. . . . Designed to stand up under the hard usage and difficult conditions a Fire Department Portable has to meet! In service with leading fire departments, these rugged 1500 watt Units have *proved* themselves capable of meeting every emergency.

Dependable. Quick-starting 4-cycle engine. Positive lubrication.

Start it and forget it! Automatic voltage regulation under all loads. No adjusting necessary. No fussing to mix gasoline and oil.

Compact. An easy load for two men.

Larger and smaller sizes available. Write for further information.

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ARMY (E) NAVY

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Training Does Pay

To the Editor:

Recently the value of your fire prevention program was demonstrated in a very material way.

In your program you stress the importance of every school child knowing what to do in case of fire. Our Department has adhered strictly to this policy and recently it paid dividends in the saving of property.

A mother woke with the house filled with smoke and rushed downstairs. She found that her 12-year-old son had grabbed the telephone, stepped out the front door and had already dialed the fire department.

In knowing the number, he saved valuable time, and in a few minutes we were on the job. Although serious damage was done, the house was saved and there was no spread of fire to adjoining property.

Credit goes to this boy for his cool-headed action, to our chief for being thorough with his work in the schools, to the school authorities for their cooperation in carrying out the program, and to you for outling and furnishing material for such a program.

I suggest that you again call to the attention of all our member departments the importance of every school child knowing how to call the fire department.

Let us keep the home fires from burning uncontrolled.

Sincerely,
EDWIN HARSHMAN, Secretary
Mingo Junction, Ohio, Vol. Fire Dept.

Report From Australia

To the Editor:

I am pleased to furnish you a copy of last year's fire report, also some data regarding the size of our fire brigade.

During the year 1944, fire alarms received in Sydney were 7994. Of these, 1607 were false alarms. This was stated by a report by the Board of Fire Commissioners. The number of calls was a record.

In the year 1900, the service covered the metropolitan area only and it possesses 28 appliances (pieces of apparatus). Today the brigade, which takes in all of New South Wales, has 320 engines, 7 large ladders, 845 officers and men, 1,793 volunteers, 1,478 reserves, 2,001 auxiliary reserves, and 565,573 feet of fire hose.

Yours sincerely,
JOSEPH GUNNER,

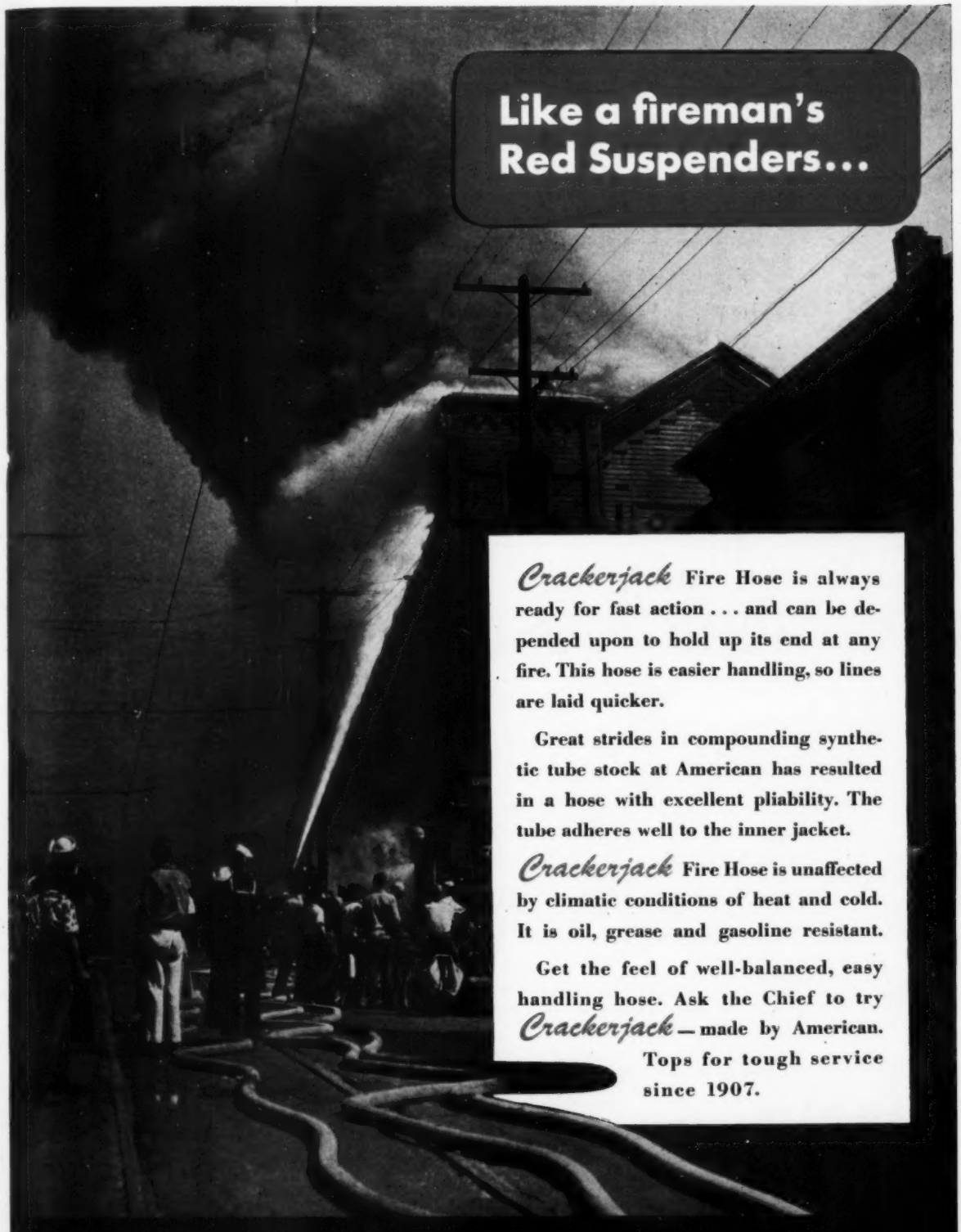
Apparatus Builders Still Have Problems

Builders of fire apparatus met with representatives of the War Production Board on July 12 to discuss difficulties encountered by the industry today.

Following the meeting, the WPB issued the following statement:

"Municipalities that are in the market for motorized fire-fighting equipment should not expect early delivery, members of the Motorized Fire Apparatus Industry Advisory Committee informed the War Production Board at their recent meeting.

"Although the limitation order (L-43) governing production and delivery of this type of apparatus was revoked April 27, certain manufacturing problems remain extremely difficult, commit-



Crackerjack Fire Hose is always ready for fast action . . . and can be depended upon to hold up its end at any fire. This hose is easier handling, so lines are laid quicker.

Great strides in compounding synthetic tube stock at American has resulted in a hose with excellent pliability. The tube adheres well to the inner jacket.

Crackerjack Fire Hose is unaffected by climatic conditions of heat and cold. It is oil, grease and gasoline resistant.

Get the feel of well-balanced, easy handling hose. Ask the Chief to try *Crackerjack* — made by American. Tops for tough service since 1907.

The AMERICAN RUBBER *Mfg. Co.*
OAKLAND, CALIFORNIA
ALSO MAKERS OF IMPERIAL, AMERICAN, MUNICIPAL AND TIGER FIRE HOSE

tee members said. All segments of the industry are having difficulty in making deliveries.

"Small and medium-sized producers, who generally build their apparatus upon commercial truck chassis, are still faced with the necessity of securing the approval of the Office of Defense Transportation to obtain chassis from the ODT pool, on which there is a heavier demand for all kinds of truck chassis than there is present supply.

"On the other hand, the larger manufacturers who build their own chassis, while free from this particular problem, are experiencing great difficulty in obtaining essential components, such as crankshafts, radiators, transmissions and axles, for their apparatus, they said.

"Until the effect of military cutbacks is felt all the way down the line from the end-product manufacturer of military equipment, through the component producers, to the forges and mills, no intelligent appraisal can be made of the time required to make deliveries of motorized fire apparatus, manufacturers said.

"Concern was expressed that during this shake-down period unemployment will occur in the industry. WPB is now engaged in an intensive drive to cut the time lag between cancellations of military contracts and the consequent freeing of the supplies involved.

"Localities in distress because of the destruction of existing essential pieces of fire fighting apparatus will continue to be given assistance by the industry in obtaining as early delivery as possible of replacement or rebuilt equipment, committee members said, in line with the policy that manufacturers have followed both before and during the war.

"ODT in the past has released and will continue in the future to release chassis from its stockpile in situations in which municipal distress is shown, a representative said. An easing of the chassis situation is hoped for, he added, before the end of the year.

"If municipalities, in ordering equipment, would limit their specifications to essential features, one committee member said, and allow the manufacturer some latitude in providing the non-essential features, delivery time could be cut materially through the substitution of materials or components on hand for those on which the manufacturer would experience considerable delay in obtaining delivery.

FIRE CHIEFS

Insist On

QUAKER'S MODERN MUNICIPAL

FIRE HOSE

with

EASY-FOLD CONSTRUCTION

With Quaker's Modern Easy-Fold Fire Hose you have a feeling of security that the hose will stand up under pressure when action gets at fever heat.

This special construction makes the hose easier to handle when "Stretching In" and when "Taking Up" the additional flexibility allows the hose to be coiled more readily.

"If there's a way to get it done . . . Quaker will do it."

FIRE HOSE · SUCTION HOSE

CHEMICAL HOSE · FORESTRY HOSE

REG. U. S. PAT. OFF.

QUAKER RUBBER CORPORATION

PHILADELPHIA 24, PA.

NEW YORK 7 · CLEVELAND 15 · CHICAGO 16 · HOUSTON 1

Western Territory

QUAKER PACIFIC RUBBER COMPANY

SAN FRANCISCO 5 · LOS ANGELES 21

PERSONS IN THE NEWS

Chief Peter Steinkellner Retires

Elbert Hubbard once said "if you want a thing done, ask a busy man to do it—nobody else has time."

Out in the City of Milwaukee, and in the circles of the Wisconsin State Association of Fire Chiefs, and the International Association of Fire Chiefs, whenever some particularly arduous, or unwanted task had to be undertaken one of the first men thought of for the job was Peter Steinkeliner, who on July 16 this year finally and formally set aside his white helmet which he has worn so long and honorably.

"Peter" or "Pete" as so many knew him, submitted his resignation to Mayor Bohn, of Milwaukee, after more than thirty-three years in the department, for twenty of which he has guided its policies as chief. During that time he brought his city to the forefront as to fire protection and fire prevention.

Five times Milwaukee has won first place in the fire waste contest of the United States Chamber of Commerce. It won second place six times, third place twice, and fourth place three times —a record unequalled by any other city of its class.

But that is only a small chapter in the busy life of Chief Steinkellner. It does, however epitomize the qualities of leadership, progressiveness, sound judgment and courage which have marked his entire official career in the fire service.

The City of Milwaukee profited immeasurably by his administration. His record was not merely a matter of civic pride for Milwaukee, it has had the very practical value of reducing insurance rates saving large sums of money for the property owners of the city. It has helped make Milwaukee a more desirable, and safer place in which to live and work. It has brought the city favorable publicity and prominence, and finally, his record and that of the department under his command, was a lodestar for all of the nation's war-essential municipalities to follow.

Chief Steinkellner's 20 years, 6 months and 5 days as chief of the department was not throughout, an era of continuous peace (what chief's is?). It at times was stormy; the chief had a way of taking the shortest cuts to attain objectives he knew to be worthy.

Improved 3-Purpose Fire-Hose Nozzle by GRINNELL

FLAMEBUSTER

"KILLS OIL FIRES FAST"

FLAMEBUSTER permits application of water in the form best suited for quick control, according to the nature of the fire —

1. **Low Velocity Spray** . . . for extinguishing stubborn fires in light, flammable liquids. Projected at a wide angle by the unique Grinnell spray tip on a 4′ or 10′ applicator. The spreading cone of evenly distributed, fine spray, applied directly over blaze, puts out flames quickly, with minimum water consumption.
2. **High Velocity Spray** . . . for general fire fighting and for extinguishing fires in heavier oils by emulsifying the blazing oil with a driving spray of water, rendering it incapable of burning. Protects fireman approaching blaze.
3. **Solid Stream** . . . for rooting out deep seated fires and for projecting a volume of water a considerable distance. For fighting fires in electrical apparatus, a long-range, non-conducting spray is substituted for the solid stream.

Complete information is available without obligation. Write to Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

GRINNELL

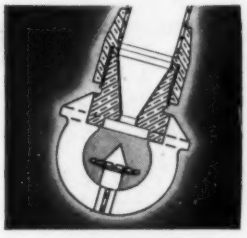
ENGINEERED PROTECTION

FLAMEBUSTER'S ADVANCED DESIGN

prevents clogging - simplifies maintenance

SINGLE LARGE ORIFICE IN LOW VELOCITY TIP

on end of the applicator breaks down the free flowing stream into finely divided spray without the use of small orifices – eliminates clogging.



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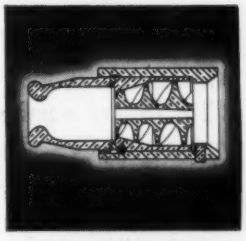
SIMPLIFIED SCROLL DESIGN IN HIGH VELOCITY TIP

Generates high velocity spray by a proved "whirl" principle that eliminates the disadvantages of small orifices.



★

EASY DISASSEMBLY

Only tool required is a screw driver. Unique corrosion-proof rubber seat for ball valve is leak-proof and permits easy operation of valve at all working pressures.

His direct, and at times ruthless probing for the facts of a situation—and his strict adherence to his code of fairness, honesty and forthrightness, resulted in bruised feelings and even active antagonism. But, as evidenced by the records, these periods of stress never impaired the efficiency of the department in which the city of Milwaukee took such pride.

Succeeds Chief Clancy

Chief Steinkellner succeeded Thomas Clancy. He became a private in the fire department October 1, 1912. He was one of a family of ten; his first job was that of office boy in a south side real estate office. He worked on "Commission Row" then for some years as a glove cutter, from which trade he entered the fire service.

He was appointed lieutenant April 21, 1920; captain, November 1, 1921; and on January 10, 1925 was made chief. He served from the horse days of fire fighting through complete motorization.

His appointment as chief by the then Hoan controlled police and fire commission caused severe repercussions. Mayor Daniel W. Hoan, breaking a long tradition of advancement by seniority in the fire department, reached over all the district and assistant chiefs to dictate the appointment of Steinkellner, then president of the Fire Fighter's Union. The mayor defended his choice against the protests of groups who charged "politics" and prophesied dire results as the outcome. The new chief, however, moved into his job, promising that there would be no discrimination, and there wasn't.

Many Fire Service Activities

Chief Steinkellner was chosen president of the Wisconsin State Association of Fire Chiefs and of the Great Lakes Division of the International Association of Fire Chiefs. He has been a director, and served as chairman of numerous committees, of the International Association for many years. He was selected by that body to serve as its representative on the fire defense committee of the Office of Civilian Defense in Washington and his counsel and advise in that connection was of great benefit to the nation's fire service and its wartime defense plans.

In a letter to Fred Shepperd, a lifelong friend, Chief Engineer Steinkellner said, in part: "Mrs. Steinkellner and I are going to enjoy ourselves at Fox Lake during the summer (where the Chief has a summer home) and I intend to do quite a bit of hunting while still able.... I will always be a member of the International Association of Fire Chiefs, and expect to attend some of the conventions in the future. I will hold my membership on the Board of Directors until my successor has been selected by the Great Lakes Division."

Wischer Succeeds Steinkellner

Edward E. Wischer succeeded to the post of Chief Engineer of the Milwaukee Fire Department, July 16. He was selected by the Fire and Police Commission "on his merits—not by any pressure."

Born in Milwaukee Aug. 11, 1898, Chief Wischer attended Milwaukee public schools, a business night school and the University of Wisconsin Extension Division. He enlisted in the Army just before the declaration of war in April, 1917, was discharged in September because he had two brothers in the service, but reenlisted in December and went overseas with the 32nd Division.

Wischer was appointed to the department June 21, 1921, promoted to lieutenant in 1929, to captain in 1933 and to district chief in 1937. Assigned to the Bureau of Training in 1941, he modernized training practices. As chairman of the wages and classifications committee he represented the fire chief before the Common Council committees and the countywide technical and policy committees on salaries. He also represented the department in public relations. He was placed in charge of civilian protection fire defense and in that work, organized and trained 1,900 auxiliary firemen and more than 3,000 firemen in 210 industrial fire brigades in and near the city.

One of his first tasks will be to appoint a successor to Deputy Chief Charles H. Tremain, who resigned from the department June 22 last.

C. N. Carrell Chief of Santa Monica

Charles N. Carrell, retired battalion chief from the Los Angeles Fire Department was recently appointed Chief

"Gee, Chief—these BODY-GUARD BUNKER SUITS sure lick the COLD Weather"

BODY-GUARD BUNKER SUITS

We are still serving the armed forces, but can fill a limited number of orders for Fire Department use. Let's hear from you and we will supply you as fast as we can.

Many a fire chief concerned with the health of his men have ordered or recommended "Body-Guard" Bunker Suits—so thousands of firemen have been wearing them daily for over fifteen years. These garments keep them dry and comfortable at every fire, and they cost so little.

BODY-GUARD MANUFACTURING CO.
ST. JOSEPH, MISSOURI

Ready for Any Job

AT ANY TIME

Here's another way that you can use portable Homelite Gasoline-Engine-Driven Generators. In case of failure of your local power supply, simply plug in a Homelite power standby unit, and you'll keep your signal system in operation until the normal power supply is restored.

Homelite Portable Gasoline-Engine-Driven Generators are "ready for any job at any time" because they are dependable at all times... ready to start and sure to run without trouble, no matter where you put them or what the working or weather conditions are.

Homelite Corporation

Portable PUMPS · GENERATORS · BLOWERS

PORT CHESTER, NEW YORK

Engineer of the Santa Monica Fire Department, succeeding Chief William J. Mohr who recently retired.

Chief Carrell spent twenty-one years in the Los Angeles Department, fifteen of which as an officer. At the time of his retirement he was in charge of the Training Division.

B. P. O. E. Honors Chief A. J. Baker

At the annual business meeting of the Elks Grand Lodge, held at New York City on July 16, Chief Art. J. Baker of Lewistown, Mont., past president of the International Association of Fire Chiefs, was named Grand Esteemed Loyal Knight of the organization.

James Wyper Dead

James Wyper, retired senior vice-president of the Hartford, Conn., Fire Insurance Company, and president of the National Board of Fire Underwriters in 1930-31, died at his home, Highland Street, West Hartford, on June 25. He was 81 years of age.

On his fiftieth aniversary in the insurance business in 1938, a fellow member of the industry said of him: "No man in the councils of the National Board has shown sounder judgment or has been more depended upon for advice, and in ethics he is with those standing at the top. He has been and is one of the principal assets in fire insurance personnel."

TOM MAGNER

FOR VICTORY OVER FIRES
BUCKEYE LEADER LINE SIAMESE
Like all Buckeye fire fighting equipment, Leader Line Siamese are "action-tested." Furnished with two-plug type, quarter-turn gate valves, Leader Line Siamese are built for effciency. For complete details on all Buckeye fire fighting equipment, write
Buckeye
FIRE DEPARTMENT ACCESSORIES
BUCKEYE IRON AND BRASS WORKS
DAYTON 2, OHIO

Appointments and Retirements

Francis M. Kennedy, former captain, Springfield, Mass., Fire Department, has been appointed district chief, assigned to District 2, 1st platoon by Fire Chief Herbert M. Root.

Edward J. Murphy, new Chief, Shenandoah, Pa., was honored at a testimonial dinner by members and friends of Phoenix Fire Company. More than 250 were in attendance. Fire Chief Otto Johnson of Easton, Pa., was guest speaker.

Captain Edward C. Williams, Council Bluff, Ia., has been appointed to the post of assistant chief, according to the announcement of Fire Chief Waldo Merrill of that city. He joined the department April 9, 1920.

At the annual meeting and elections of officers in Northern New York volunteer fire departments the following chiefs of fire departments were installed: Leo J. French, Norwood; Stanley E. Barber, Canton; Gerald Washburn, Parishville; Percy LaPlante, Norfolk; James J. Doyle, Jr., Potsdam; Herbert Morgan, Racquette River; Joel Bacon, Great Bend; John Putnam, Redwood; Harvey W. Gallup, Lowville; Murray Babcock, Hermon; William J. Potter, Sandy Creek; Fred I. Guy, Lacona; William Wiley, Cape Vincent; Melvin Buker, Copenhagen; Lansing Peck, Chaumont; Merlen Thomas, Croghan; Elwin Bigelow, Richville; Harold Montague, Henderson; John W. Jones, Philadelphia; Fed Doxtator, Glen Park; Fred C. O'Brien, Black River; Charles H. Corey, Brownsville; Joseph E. Farney, Lyons Falls; Clinton R. Hodge, Sackets Harbor; Howard Gruner, West Carthage; Clarence J. Roberts, Carthage; Max Doane, Dexter; R. Emmett Lalonde, Clayton; and Robert Samuels, Boonville.

SANFORD D. DEWEY.

Mayor Rudolph Roulier of Cohoes (N. Y.) has requested an extension of time in the proposed retirement of Fire Chief James H. Golden of Cohoes from the service. According to the Mayor, the fire department is functioning most efficiently under the leadership of the present chief, and the Mayor requests State Comptroller Frank Moore to allow Chief Golden at least two years more of active service. The chief, who is above the age limit, was urged to file application of retirement by the state comptroller. (Thanks, James Wells.)

S. F. Holic Appointed Chief

Stephen F. Holic, Binghamton, N. Y., has been appointed chief of the fire department at the Pine Camp military reservation, N. Y., to succeed William F. Clapper, Watertown, who has resigned. Chief Holic has been with the Pine Camp department for the past four years.

Arthur Burke is the new first assistant chief, and Ward R. Brierton, Black River, has been named second assistant. The Pine Camp department includes both soldiers and civilians and is under the supervision of Capt. Edwin F. Durang, post fire marshal.

SANFORD DEWEY

WHEN TRAVEL was in full swing, tourists came from all over to walk around this once active crater. But this old fire-spouter went out years ago. It's cold and dead now . . . permanently dead . . . as safe to approach as a fire killed by MEARLFOAM-5, the war-born, blended multi-protein mechanical (air) foam.

Fire-fighters make the kill just once when dealing death to a terrific gasoline or oil fire—with MEARLFOAM-5. Then this stable, fire-resistant foam takes over and stands guard against re-ignition—prevents the flash-back which rekindles a blaze with all its former intensity.

This positive, anti-flashback factor of MEARLFOAM-5 permits fire-fighters to approach an extinguished fire with a great deal of personal security . . . confident that MEARLFOAM-5 which puts fire out fast—keeps fire out permanently.

The many unique and dependable properties of MEARLFOAM-5 are the sole reasons the U. S. Navy uses it extensively for preparedness . . . and for the quick extinguishment of raging gasoline and oil fires on shipboard and at shore bases. MEARLFOAM-5 is the veteran of many successful engagements, and one day will demonstrate to all—the super effectiveness of mechanical (air) foam as the most successful method for combatting gasoline and oil fires. MEARLFOAM-5, after putting fire out—*keeps it out* . . . totally eliminating the flashback hazard which in the past has taken such a terrible toll of lives and property.

MEARLFOAM-5 is a good-mixer—with any type of water: *sea water, fresh water, hard or soft water.* It works at maximum efficiency in any climate or atmospheric condition. Its performance is practically constant and invariable over a wide range of conditions. When split-seconds count—you can rely on MEARLFOAM-5 to put fire out fast—to keep fire out *permanently!*

A one-page condensed data sheet detailing the unique properties of this war-born fire-fighting foam is now available on request. Please ask for it.

Completely safe and non-corrosive—may be used with standard Mechanical Foam-Forming Equipment

FOAM ON FIRE OUT... Stays OUT!

THE MEARL CORPORATION
153 Waverly Place, New York 14, N.Y.

War Fare

The Hazard Lingers On?

From Wilmington, Del., comes an anonymous contribution, dated June, which tells about a 1,200-acre secret Army railroad yard at Cooch's Bridge, near the place which has been used as a huge ammunition storage dump since last fall. Although few knew it, tons of "hot stuff" have been stored there in railroad cars, until it could be handled at the Hog Island Terminal of the Philadelphia Port of Embarkation.

The Army has not revealed the tonnage handled in the yard, but it is said to be an important cog in the Hog Island Terminal, which shipped 1,340,996 tons of ammunition in three years. No decision has been made as to the future of the yard, say Army officials, but Hog Island will be discontinued this summer. Let's hope for the fire service of the area that the hazard has also ceased to exist.

* * *

Where Ignorance Is Bliss

In London, Eng., Mr. and Mrs. John Conn spent nearly two years blissfully unaware that an unexploded German anti-personnel bomb was hanging over their heads.

The bomb, a relic of the Nazi air blitz on London, was found on the roof of their home. When exploded by a demolition expert it blew gaping holes in the roof and damaged furniture inside the house.

* * *

Those Loud "White Elephants"

Looks like it is going to cost some cities money to get out of the air raid alarm business. New York, which offered to sell ten super-dooper sirens which cost $3,750 each in 1942, got just seven bids, but the most attractive offer was a negative one, from one bidder who offered to remove them—one one from atop the R.C.A. Building, the others scattered around the city—and keep them if the city would pay his company $2,250. Just for removal, with the city keeping the sirens, the company wanted $4,460. The Department of Market and Purchase present "keeper" of the "white elephants" is hoping for better luck with 443 small sirens, which are also on the block.

* * *

Bombay Fire Loss Declared Record

It has been said that the fire in Bombay, India, which was started by an explosion on a munition ship on April 14, 1944, may prove to be the largest individual fire loss in history when complete information is finally available.

Though reports on casualties and monetary damage very widely and accurate details are slow in materializing, the loss of life is estimated to be in the neighborhood of 1,000 persons, personal injuries to between 1,000 and 2,000 and the aggregate property damage more than a billion dollars.

The fire started on the S.S. Fort Stikine, which had docked at Bombay with a cargo of cotton, lubricating oil and other commodities in addition to explosives and ammunition. Accidental ignition of cotton in one of the lower holds was responsible for the outbreak. The resultant spread of the fire and explosions killed many officers and men of the Bombay Fire Brigade.

* * *

FROM OVERSEAS CORRESPONDENTS

The Manchester Guardian (Manchester, Eng.) recalls that when an American, in 1873, took a steam fire engine to Tokio, he found himself in competition with a "racket" which, briefly, appears to have been an arrangement under which owners of property paid protection money to the local fire brigade bosses.

The larger the subscription, the greater the quantity of water which arrived at a fire and presumably the rule was—no subscription, no water at all.

This payment in advance system was so lucrative that the local fire bosses would brook no interference and the enterprising American, having had it earnestly impressed upon him that his early departure was advisable, left the city with his fire engine, never to return. (Thanks "The Fireman").

* * *

Firehouse Training

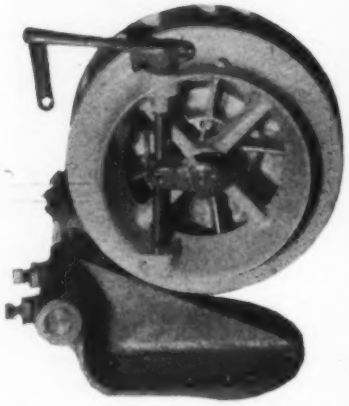
British firemen are brushing up on their English and arithmetic. Blackboards and class room paraphernalia are in evidence in many fire stations, firemen instructors at 55 houses in London alone are holding classes in English and mathematics for their fellow firemen and firewomen.

All this, we are told, is part of a scheme to help prepare the men and women for civilian employment again; but the professional fireman too is finding that there is much that he has

H.O.R. Mechanical Sirens
REG. U.S. PAT. OFFICE

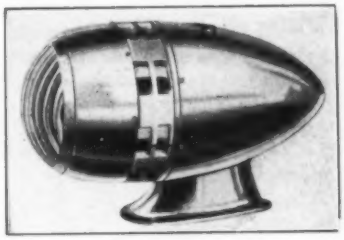
MOST POWERFUL EVER OFFERED!

For apparatus, Chief's cars, ambulances, etc. Easily attached to any make engine. Some of these powerful sirens have seen 150,000 miles service without repairs of any kind. Many in service for over ten years. Loudest most dependable available.



Combination LIGHT and SIREN Available NOW

For fire apparatus or official's car—these combination light and siren—as well as flashers, floodlights and other equipment — all available NOW. Don't gamble with protecting your men, chief—get this new protection NOW.



Write for catalog F.E.

H.O.R. Co., Inc.
STAPLETON
STATEN ISLAND, N. Y.

THOUSANDS OF FIREMEN
from Coast to Coast
Wear this popular outfit...

2 Piece combination SUIT

● RUBBER OR CANVAS

The Coat... Flexible elastic inner sleeve for wrist to keep out water, cold and sparks; adjustable collar strap, detachable wool lining, Midwestern Safety snaps, two outside pockets, 6-inch storm flap and many other fine Midwestern qualities.

The Pants... These Midwestern Bunker Pants are equipped with a removable wool lining which has safety snaps that cannot catch on anything. Sturdy construction, reinforced crotch for pole sliding. These pants together with coat illustrated above are Midwestern's outfit No. 101.

FIREMEN like this Special Combination Suit for many reasons: Detachable wool linings; flexible elastic inner sleeve for wrist to keep out water, cold, sparks; exclusive Midwestern Safety Snap, and many other outstanding features. Midwestern garments are favored by the larger municipal departments throughout the country.

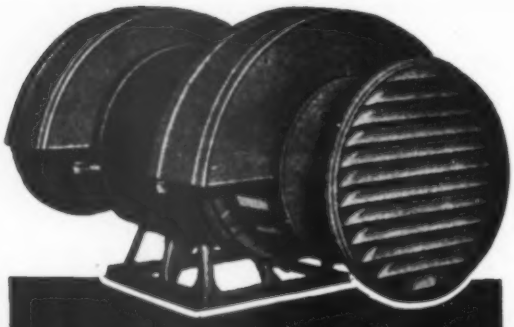
REGULAR FIREMAN'S BOOTS NOW AVAILABLE

Fireman's boots ¾ length, reinforced instep, felt linings. Do not confuse these boots with reclaimed boots which have been offered firemen for past 2 years. These are regular fireman's boots made of the new synthetic rubber. Write.

MIDWESTERN PROTECTIVE CLOTHING

MIDWESTERN MANUFACTURING CO.
MACKINAW, ILLINOIS

See your Midwestern Mfg. Co. representative for catalog and prices, or write the factory.



STERLING MODEL "M"

GENERAL ALARM SIREN

You Can Depend On It ALWAYS

An absolutely dependable, tried and proven siren for communities of all sizes. Loud, clear, simple to instal and no maintenance to bother with. Embodying the "know how" of the oldest and largest makers of siren signals in the fire field. Write for descriptive literature and list of towns using the model "M".

ALSO
manufacturers of a complete line of apparatus sirens.
Write for literature.

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

Motor-driven with ¼ h.p. gear head motor.

DAYTON

POWER-DRAULIC EXPANDER

a MUST for the proper care of hose

EXPANDS rings on couplings from ¾-inch chemical hose to 6-inch suction with positive expansion.

TESTS hose up to 700 lbs. pressure automatically. No manual labor required whatever.

REMOVES old rings from couplings without the use of hammer and chisel in half the time—easy, simple operation; larger, roomier work table, fully streamlined.

Write for our proposition.

DAYTON FIRE EQUIPMENT COMPANY

1241-48 West 2nd St., DAYTON 7, OHIO

forgotten that can advantageously be re-learned by these classes. The instructors are said to be formerly school-masters themselves. Pupils in April numbered 1,300.

* * *

Foreign False Alarm Fields

False alarms are not indigenous to America. Great Britain has its fill of 'em, too. We are told that an appeal to the public to cooperate with the police detecting persons who give false fire alarms was made by Mr. J. Dyer Simpson, chief general manager of the Royal and the Liverpool & London & Globe Insurance companies, at the annual meeting of the Fire Salvage Association in Liverpool this spring.

Mr. Simpson said that of 2,018 calls received to civil fires on Merseyside last year, no fewer than 787 were false alarms, 652 of them malicious. "He hoped drastic treatment would be forthcoming to stop a nuisance which wasted valuable time and effort of the fire services."

This ought to give some of us a comfortable feeling to know that our Brothers in Britain are in the same boat with us.

* * *

Queer Asphyxiation

A National Fire Service part-timer was overcome by carbon monoxide fumes while sitting in a towing vehicle, which was adjacent to a trailer pump working from a dyke. He died later. His comrade, who was also overcome by the fumes, said that there was no smell of any fumes.

A verdict "Asphyxiated by CO" was given at the inquest.

* * *

Wide Open Spaces

The brush fires in Victoria a year ago were on a vast scale and the after-effects on the world's food supply are now being felt. It is estimated that 3,000 square miles of country were burnt out, 1,000,000 sheep, 50,000 cattle 1,000 horses, 1,000 pigs, 200,000 head of poultry and 5,000 hives of bees were destroyed and large areas of highly productive country rendered useless for a long period. The cost of repairing the damage is said to have exceeded $75,000,000.

* * *

Dangerous Work

The story of an outstanding operation of an exceptionally dangerous nature performed by Merseyside firemen has now been released for publication.

More than 1,500 gallons of high-octane aviation spirit (gasoline) had leaked from containers in a 7,000 ton ship. A thick fog prevented the vessel from being taken out to sea, where the gasoline could have been pumped overboard, so, stripped to the waist, and with all metal removed from the rest of their clothing, the men operated hand pumps to transfer the gasoline into 45 gallon drums, in which it was removed. Frequent reliefs were necessary, and strict supervision had to be maintained in case the men became affected by the fumes in a situation where one irresponsible act would have meant disaster.

Oxygen breathing apparatus was kept in constant readiness. While other vessels passed all men were withdrawn from the vapor-filled ship in case a spark from the funnels caused an explosion.

(Acknowledgments to "The Fireman")

KNOCKS OUT TOUGH FIRES FAST

Anywhere on the Property

Carries TONS of Cardox CO_2 at Truck Speed

Armed with *tons* of fast-acting carbon dioxide, a Cardox Fire Truck provides *major* fire protection for widely scattered fire hazards.

With this big, speedy, self-contained fire fighter on the job, the tough, fast-moving fires . . . likely to strike anywhere flammable liquids are processed, piped or stored . . . are knocked out in their early stages before they can spread beyond control.

Cardox Fire Trucks get *tons* of Cardox CO_2 to any hazard on the property at truck speed. They go into action fast with a tremendous mass discharge of more than 1400 pounds of cold, inert carbon dioxide per minute. A giant blanket of this fast-acting extinguishing medium quickly smothers and cools out even relatively large fires. Equally important, *numerous* smaller hazards, requiring proportionately smaller extinguishing applications, can be given *uninterrupted* protection with a single filling of Cardox CO_2.

Like Cardox Fire Extinguishing Systems, Cardox Fire Trucks are engineered to give carbon dioxide enhanced fire extinguishing characteristics. Greater cooling effect is realized. More effective projection of the extinguishing discharge is made possible. Uniform extinguishing performance can be depended upon winter or summer . . . indoors or out.

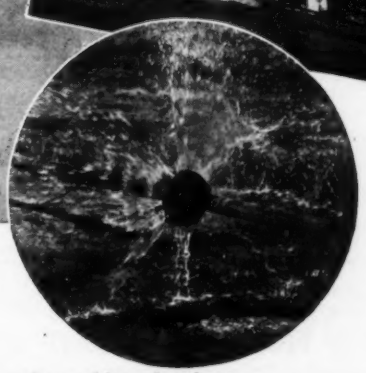
Cardox Research Division and Engineering Department will welcome the opportunity to cooperate in developing fire protection . . . utilizing a fixed system, mobile equipment, or a combination of both . . . for tough fire hazards. Send for full particulars and Bulletin No. 1985. Write for free copies.

CARDOX CORPORATION
BELL BUILDING • CHICAGO 1, ILLINOIS

District Offices in **New York • Washington Detroit • Cleveland • Atlanta • Pittsburgh San Francisco • Los Angeles • Seattle**

FOR EXAMPLE:

Demonstration fire pictured at right covers a small—but tough—hazard . . . Gasoline spraying from a broken flange on a pipe line, feeding a fast-spreading, flaming pool. Cardox CO_2 from a single Cardox nozzle (as shown in middle picture) extinguished this fire in 20 seconds. Gasoline continued to spray from flange after extinguishment.



CARDOX
CO_2 FIRE EXTINGUISHING SYSTEMS

THEY KNOW FROM EXPERIENCE

Firefighters who have used Hale Fire Pumps have learned through first-hand experience to appreciate their flexible range of performance and high efficiency.

They know they can depend on HALE for the right volume and the right pressure to fit a wide range of tough fire-fighting conditions.

Make sure of this same flexibility and dependability in your next piece of apparatus by insisting on a Hale Pump.

Write today for up-to-date information on Hale Fire Pumps . . . built in all Standard Capacities.

HALE
FIRE PUMP COMPANY
Conshohocken, Pa.

PORTABLE — GENERATING PLANT

Designed to produce the maximum output per pound weight, plant is particularly suitable where portability is a factor.
Meets the standards of the aircraft service. Over 100,000 are now in use in the armed forces.
Truly a heavy duty, high capacity, lightweight, sturdy, streamlined, compact and portable plant. Will stand the most severe operating conditions.
A complete line of floodlight projectors, extension cords, live circuit reels and receptacle boxes.

Write now for complete details.

Security FIRE EQUIPMENT CO. 1550 PRINCETON AVENUE TRENTON, N. J.

Hot Off the News Tape

In an attempt to fasten his belt while riding on the off-side running board of an NFS (National Fire Service) appliance responding to a fire alarm at Southampton, Eng., fireman Albert C. Robins, 39, fell to the ground, fracturing his skull, from which he died. . . . Coventry Works Fire Brigades Association, Coventry, Eng., formed in the last war, to afford protection to industrial plants, contemplates erection of a $75,000 headquarters, as a memorial to industrial fire-fighters killed during air raids on city and district during the present war. . . .

"Safety Gasoline" After the War?

In June FIRE ENGINEERING received through reliable channels advance notice of a new "non-explosive" gasoline, developed in wartime, to be ready for civilian use after the war.

Efforts to secure confirmation of the story, both through the oil company accredited with having developed the fuel, and the American Petroleum Institute were unavailing and so only the briefest notice of the reported product was published in the July number of this journal.

Development of the much-rumored safety fuel was announced July 19 by Ralph W. Gallagher, chairman of the board of the Standard Oil Company of New Jersey. On that day representatives of the press were given a dramatic demonstration of the safety fuel in New York City.

As a disaster preventative, the gasoline has two main qualities. Whereas the regular high test 100-octane at ordinary temperatures and as cold as —40 deg. Fahr. vaporizes to form inflammable mixtures, the new fuel does not do so unless heated up beyond 105 deg. Fahr. Thus the hazard of accidents all too common in the use of gasoline, it is said, is cut drastically. Secondly, whereas the everyday gasoline's entire envelope of vapor ignites instantly, the new gasoline, when it does burn, burns slowly.

Following the series of comparative tests between samples of the present day fuel and the new, technicolor films were shown to picture the contrast between the qualities of larger amounts of the two fuels. One gallon of the regular fuel, thrown against a wall, and striking eight feet away from a torch, burst violently into a wall of fire. The new fuel, hurled directly over a torch did not explode, but dripped down to burn in leisurely little globules.

The new fuel is pronounced by aviation and petroleum engineers as a most important technical advance. It is a blend of components—of a heavy material called alkylite, of good gasoline, and ethyl fluid—and has been perfected over a period of fifteen years.

Standard Oil, it is reported, first went to work on it in Baton Rouge, La., and was able to produce a gasoline of lowered volatility and thus of greater safety. This was accomplished by means of distilling high-octane gasoline. However, the resulting fuel would not run ordinary airplane motors, since it would not ignite in the cylinder, and it was expensive to produce.

Safety gasoline of low-octane quality was used to test dirigible engines by

EASTMAN
FIRE FIGHTING PRODUCTS

OVER 120 YEARS SERVICE IN THE FIRE FIELD—YOUR ASSURANCE OF COMPLETE DEPENDABILITY

IT takes experience to make a good fire fighter, and it's the same with manufacturing good fire equipment. We have the "know how" when it comes to first-rate, top quality, dependable fire fighting products. Our lives have been devoted to seeing that the fire service gets the very best that skill and experience can produce.

Important: As restrictions on materials are lifted we will get back to serving our hundreds of old, and new customers. To avoid waiting longer than necessary let us know NOW what your immediate postwar requirements will be. We'll do our level best to fill your needs in the order your requests are received. ACT NOW to avoid further delay!

Nothing takes the place of Experience

SAMUEL EASTMAN COMPANY, INC.
CONCORD, N. H.

Since 1824

Take light to the fire—with lightweight 1,250 watt Universal Plug-in lights, electric saws to fight fires faster.

Have Ample Floodlighting with a

Hand-Carried, Trailer or Truck Models—250 to 25,000 Watts

Universal ELECTRIC PLANT

● Floodlighting makes possible faster, more efficient firefighting — enables firemen to enter darkened buildings with greater safety. Cities and towns, coast to coast, have found Universal electric plants invaluable for night blazes — depend upon their aid in helping save lives and property.

Now is the time to include a reliable Universal gas-engine driven electric plant in your plans for equipment modernization. Whatever your budget may be—whatever your electrical requirements, you'll find a plant suited exactly to your needs. Over 100 models to choose from—ranging from small 250 watt battery-charging plants . . . compact, hand-carried plants having pilot light and plug-in receptacles for floodlights, electric saws, cutters, etc. . . . dolly or trailer-carried models—to medium and large capacity units for truck service.

Universal are quick starting; are built for long years of reliable, low-cost service. Available in AC or DC current. Have better floodlighting equipment with a Universal. Write for literature and recommendations.

UNIVERSAL MOTOR COMPANY
Since 1898
418 Universal Drive, Oshkosh, Wisconsin
BUILDERS OF THE WORLD'S MOST COMPLETE LINE OF ELECTRIC PLANTS

SEALAND

Motor Fire Apparatus

CENTRIFUGAL BOOSTER PUMPS

MIDSHIP MOUNTED

POWER TAKE-OFF OPERATED

NOW AVAILABLE

Write for information

THE SEALAND CORPORATION, SOUTHPORT, CONN.

the Navy, and a higher octane fuel in 1937 powered a plane at Roosevelt Field, L. I. It required modification of the motor so that the fuel could be injected directly into the cylinder. With the approach of the war, aviation turned away from this fuel because there were too many problems connected with its application.

The war, however, brought just those developments required to make the new fuel practical—injection engines became available and the components required to produce the new fuel in quantities large enough to be reasonably cheap, were accumulated. Large military ships, it was disclosed, have engines which could use the safety gasoline.

Engineers believe the new fuel may have wide application in gasoline-powered boats, including pleasure craft, eliminating one of the hazards of boat accidents.

Just what this fuel, when and if adopted and used nationally, will have on the nation's fire loss and casualty list—and what it will mean to the fire service, cannot be prophesied at this time. That it has tremendous potentialities would appear to be certain.

Questions and Answers

(*Continued from page* 596)

inch hose and then combine the two nozzles.

Two parallel lines of 2½-inch hose each 150 feet in length are equivalent to $150 \div 3.6 = 41.667$ feet of 2½-inch hose, single line.

The two 1-inch nozzles are equivalent to a 1⅜-inch nozzle.

The total length of the layout will be 500 feet + 41.667, or 541.7 feet, approximately.

Nozzle pressure is 50 pounds.

Engine pressure = nozzle pressure $\times$ $(1.1 + KL)$.

K = .341 (for 1⅜-inch nozzle on 2½-inch hose).

$L = 541.7 \div 50 = 10.83$.

Then E. P. $= 50 \times (1.1 + .341 \times 10.83)$.

$= 50 \times 4.795$.

$= 239.65$ pounds.

Short-Cut for Determining Discharge

To the Editor:

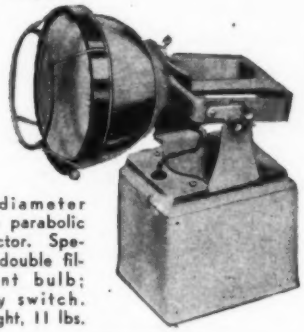
I was a fireman in Dallas, Texas, before joining the Navy. I have studied your books and believe that I have discovered a short cut and would like to place it at your disposal in the hope that it will be useful to others.

Friction losses, engine, nozzle and back pressures have always been easy head work by short cuts, but discharge has caused me embarassment, especially with seldom used tip sizes.

The formulas $29.7d^2\sqrt{P}$ or $\frac{1}{2}\sqrt{2FL - .25} - .25$ are fine for paper work but the decimal points and square roots are stumps for head work to anyone except a mathematician. One could memorize a discharge table but would be unlikely to retain any figures except a few of the frequently used ones.

"MASTER-LIGHTS"

• FOR THE CHIEF—TYPE WS HIGH-POWER RECHARGEABLE LIGHT: Mile Searchlight, 250,000 c.p. emergency beam for 8 hours, or 20 hr. worklight per battery charge.



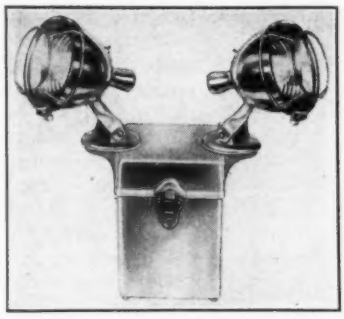
6" diameter true parabolic reflector. Special double filament bulb; 3-way switch. Weight, 11 lbs.

• SUPER-6—FOR THE OFFICERS—TYPE SUPER-6 HIGH POWER RECHARGEABLE LIGHT: Equal in power, burning hours, etc., to the WS but somewhat lighter in construction and does not have

the patented handle that keeps the weight always directly under the fingers. Height, 13 inches. Weight, 10 pounds.

• OSCILLATING BEAM WIG-WAG REDHEAD—TYPE #06, 6" diameter, and TYPE #08, 8": Put one on every car and truck. CLEARS YOUR SIDE OF STREET, TOO — for safer, faster, quieter runs.

PREVENT PANIC AND DEATH SAVE LIVES



TYPE DUL MASTER*LIGHT (Automatic)

Road Houses, Factory Rooms, Loading Docks, Theatres, Lodges, Auditoriums, Restaurants.

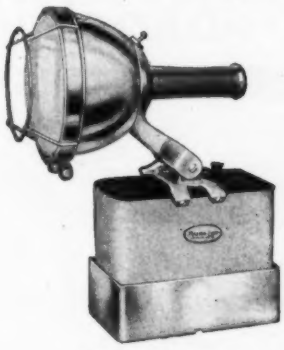
Where continuous light must be maintained. On failure of usual lighting facilities Type DUL lights instantly illuminating 100' diameter circle with each lamp head. With special year-long shelf-life rechargeable battery and manual or automatic control.

EMERGENCY LIGHTS FOR HOSPITALS, CONTROL ROOMS AND KEY POSITIONS

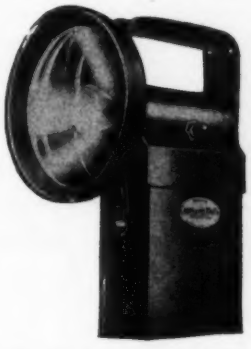
HOSPITAL MASTER LIGHTS: No operating room is adequately equipped unless it has a self-contained battery light such as Master*Lights. 85% of all operating room light failures result from bulb, wiring or switch faults BETWEEN THE WALL PLUG AND THE LAMP FILAMENT. The Master*Light is entirely independent of outside electrical current, yet gives ample light and long, trouble-free service. Single or double head, with dry or rechargeable battery having year-long shelf-life. Large casters roll easily. Telescopic height and universal joint adjustments. Type DHL

"MASTER-LIGHT MAKERS"

• TYPE F5: Uses dry cell Hotshot type of battery. Otherwise like the Super-6.



• FOR THE MEN—TYPE G-23: Watchmen and Firemen's Light. Rechargeable battery. Saves many dollars in dry batteries annually as watchmen's light. Two-filament



bulb, one for all night service and other for firemen, police, and watchmen's emergency uses. Weighs only 76 oz. Third-mile-range. With or without carrying strap.

• TYPE T&T 2-WAY with one red and one white light. Beam and red reflectors. Uses two No. 6 or telephone type dry cells. 1/5th mile range. Focusing knob. Sturdy rustproof steel case.

CARPENTER MFG. CO., BOSTON 45, MASS.

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NOZZLE PRESSURATERS

By

INCREASING PUMPER EFFICIENCY

•

PROTECT YOUR FIREMEN FROM AVOIDABLE ACCIDENTS CAUSED BY EXCESSIVE NOZZLE PRESSURES

The Nozzle Pressurater installed at the engine instantly and accurately measures velocity stream pressure at the nozzle and rate of discharge in G.P.M.

•

Write for

Descriptive Bulletin No. 171-1

•

Attention Manufacturer's Representatives. Your territory may be open.

Write to:

BARTON

INSTRUMENT COMPANY

2306 East 38th Street

LOS ANGELES 11, CALIF.

My formula requires the memorizing of only a few points and deals completely in whole numbers easily remembered. Its average of miss, compared with the Underwriters' formula or discharge tables, is comparatively small. In thirty minutes anyone can completely master it.

I start with the basic combination of 45 pounds nozzle pressure and 200 gallons per minute for a 1-inch tip. For all other nozzles pressures for 1-inch tip, if the pressure is greater, subtract 45 from it, double the remainder and add to 200 for the discharge.

For example: A 1-inch tip at 60 pounds nozzle pressure supplies how many gallone per minute?

Answer: 1-inch tip at 45 pounds nozzle pressure is 200 gallons per minute.

$$60 - 45 = 15$$
$$15 \times 2 = 30$$
$$200 + 30 = 230$$

One inch tip at 60 pounds nozzle pressure is 230 gallons per minute.

By formula, we get 228 gallons per minute.

By tables, we get 229 gallons per minute.

For all other sixes of nozzles, consider first as a 1-inch tip and then multiply by the following: For a 1⅛-inch tip, multiply by 1¼; for 1¼-inch tip, multiply by 1½; for 1½-inch tip, multiply by 2¼; for 1¾-inch tip, multiply by 3; for 2-inch tip, multiply by 4.

Example: A 1⅛-inch tip at 60 pounds nozzle pressure supplies how many gallons per minute?

Answer: 1-inch tip at 45 pounds nozzle pressure supplies 200 gallons per minute.

$$60 - 45 = 15$$
$$15 \times 2 = 30$$
$$200 + 30 = 230$$
$$\tfrac{1}{4} \text{ of } 230 = 57$$
$$230 + 57 = 297$$

1⅛-inch tip at 60 pounds nozzle pressure gives 287 gallons per minute.

By formula, the answer is 288 gallons per minute.

By table, 290 gallons per minute.

Example: a 1¼-inch tip at 60 pounds nozzle pressure supplies how many gallons per minute?

Answer: 1-in. tip at 60 pounds nozzle pressure supplies 230 G.P.M.

$$\tfrac{1}{2} \text{ of } 230 = 115$$
$$230 + 115 = 345$$

Example: a 1½-inch tip at 60 pounds nozzle pressure supplies how many gallons per minute?

Answer: 1-inch tip at 60 pounds N. P. supplies 230 G. P. M.

$$2\tfrac{1}{4} \times 230 = 517$$

By formula the answer is 513 G. P. M.

By table, 517 G. P. M.

Example: a 1¾-inch tip at 60 pounds supplies how many G. P. M.?

Answer: A 1-inch tip at 60 pounds supplies 230 G. P. M.

$$2 \times 230 = 690$$

By formula the answer is 697 G. P. M.

By table, 704 G. P. M.

Example: A 2-inch tip at 60 pounds N. P. will supply how many G. P. M.

Answer: A 1-inch tip at 60 pounds N. P. = 230 G. P. M.

$$4 \times 230 = 920$$

By formula, the answer is 914 G. P. M.

By table, 920 G. P. M.

J. H. B.

Answer: The method you suggest is sound mathematically. Once you have the discharge for a 1-inch nozzle, the finding of discharge for other size nozzles is based directly upon a comparison of the cross-section areas of the two nozzles.

The table below of areas of nozzles from 1⅛ inches to 2 inches in size will explain this.

Nozzle Size	Area
1-in.	.7854 sq. in.
1⅛-in.	.9940 sq. in.
1¼-in.	1.2272 sq. in.
1⅜-in.	1.7671 sq. in.
1¾-in.	2.4053 sq. in.
2-in.	3.1416 sq. in.

If you multiply the figure for area of 1-inch nozzle respectively by 1¼, 1½, 2¼, 3 and 4, you get the following figures: .9871, 1.1781, 1.7671, 2.3562 and 3.1416.

Note how closely these figures tally with the actual cross-section area of nozzles as given previously.

Fire Losses Increase in First Six Months

Estimated fire losses of $34,090,000 in the United States in June brought total losses for the first six months of the year to $233,391,000, an increase of $19,339,000 over losses of $214,$52,000 for the first half of 1944, it was announced by W. E. Mallalieu, general manager of the National Board of Fire Underwriters. The estimates are based upon incurred losses reported to the Board by member companies, plus an allowance for unreported and uninsured losses.

The June losses were $3,535,000 or 12 per cent higher than losses of $30,555,000 in June, 1944, and $63,000 or less than 1 per cent below losses of $34,153,000 in May of this year. Losses in the twelve month period ended June 30, 1945, totalled $442,877,000, as compared with $403,773,000 for the year ended June, 1944.

Fireproofing Workers' Clothing

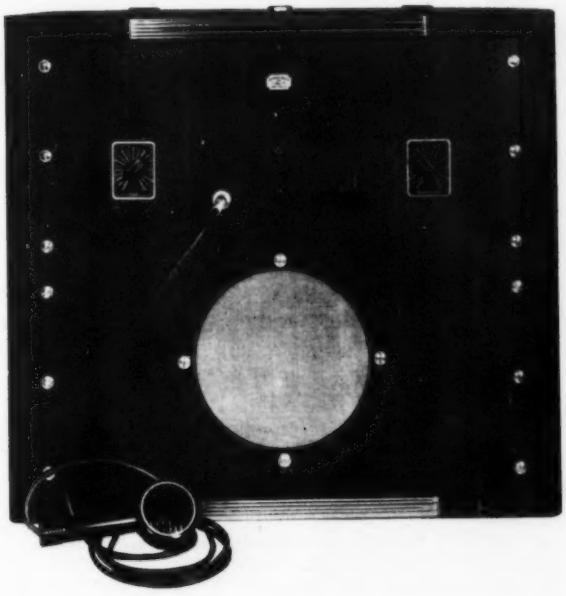
An Illinois concern is offering a unique protection service to those of its employees who are exposed to fire or explosion hazards. At a nominal fee, it collects aprons, coveralls, shirts, pants, hats and gloves; washes them, fireproofs them, and returns them ready to wear.

A.B.C. FIRE PHONE

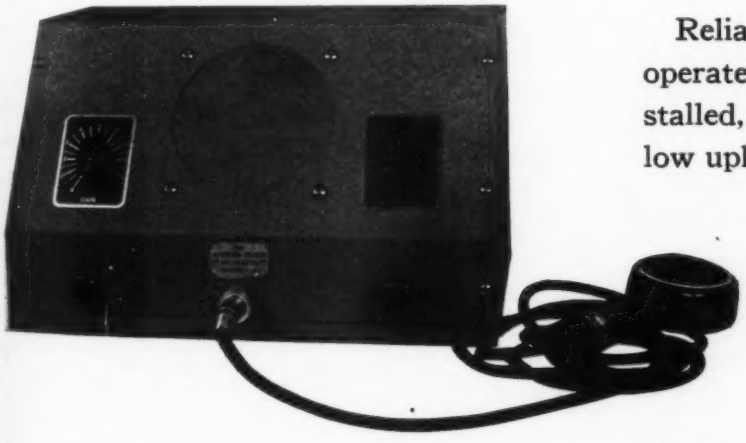
THE ORIGINAL LOUD SPEAKING PHONE

TYPE A.B.C. 700 ENGINE HOUSE UNIT

One of the greatest single contributions to the rapid dispatching of fire apparatus to the scene of action developed within the last 50 years. Remember, more alarms are received over the telephone than all other means of emergency communication.



TYPE A.B.C. 701 SUB-SET



Reliable, rugged, easy to operate. Dependable, easily installed, low in first cost and low upkeep.

"There is no substitute for Experience"

Southern Switch & Signal Co.

Shreveport, Louisiana

THE NEW
SAW-GUN
SHOULD BE STANDARD
ON ALL
FIRE-FIGHTING EQUIPMENT

Here's Why..!

The Saw-Gun is a portable power-saw that will quickly cut into all metals, wood and other materials. Quickly attaches to any electric or air drill, and may also be propelled by a flexible shaft. Insert ordinary hack-saw blade for cutting.

Firemen equipped with this handy tool can now get at the fire quickly. Can cut openings into obstructions regardless of their material. Cuts rapidly through heavy gauge steel. No need to waste precious time removing steel gratings . . . cut them out of the way with this amazing portable tool. Does away with slow, cumbersome, dangerous gas cutting torches, together with their long lines of hose and heavy tanks.

Progressive fire-chiefs who know the importance of getting at a fire *fast*—who want a quicker means of getting to entrapped persons, will add the Saw-Gun as standard equipment.

ONLY $42.00
QUICK SHIPMENTS ON AA-5 PRIORITY OR HIGHER

Sold on Money-Back Guarantee

SEE YOUR JOBBER or WRITE DIRECT
Mid-States
EQUIPMENT COMPANY
Saw-Gun Division
6172 S. MICHIGAN AVE., CHICAGO 16, ILL.

Manufacturers' Announcements

(*Continued from page* 591)

"Industrial Safety Equipment"

"Industrial Safety Equipment" is the title of a booklet just published by Stewart R. Browne Mfg. Co., Inc., 258 Broadway, New York, N. Y.

The booklet contains six bulletins, bound together in loose-leaf form with cover, as follows: Portable Tuffite Flashlights; Battery-Operated Inspection Lights; Vapor-Proof Portable Extension Lights; Explosion Proof Portable Extension Lights; Aircraft Engine Inspection Lights and Emergency Grounding Devices.

New Liquid Insulation

Another war-tested product to be made available to the public and the fire service has been introduced by U. S. Industrial Chemicals, Inc. It is called PIB and is used as a waterproofing agent on automotive and other ignition systems and to prevent corrosion and current leakage in batteries. It is also used to re-insulate cracked, worn, or dried-out wiring and as a rust inhibitor.

The Round Table

(*Continued from page* 594)

eligible list. Returning to the city he found he was first on this list and as such holds priority over those on a later list certified in 1943.

Edward F. Dahill, Chief, New Bedford, Mass.: Men now in the armed forces will be reinstated in the New Bedford Department when they are mustered out. They will be given credit for the time spent in uniform towards their seniority in the department. No credit will be given in promotional examinations.

Disabled veterans must take a physical examination under a Civil Service State law.

Edw. J. Cannon, Chief, Norfolk, Va.: Former firemen will be reinstated and given credit for time spent in the armed forces.

Men with medical discharges must be examined by a doctor. If able they are reinstated in the fire department.

Herman E. Gutheim, Chief, Cambridge, Mass.: Firemen now in the armed services will be reinstated and given credit for the time spent in uniform towards their seniority in the fire department.

Men with medical discharges will be examined by city physician and will undoubtedly be reinstated.

John T. Lynch, Chief, Kansas City, Mo.: Former firemen now in the armed forces will be reinstated in the fire department when they are mustered out. Time spent in the armed forces is not credited towards their seniority in the fire department. However, they are given veteran's preference in examinations.

John H. Lennox, Chief, Camden, N. J.: Firemen mustered out of the armed forces will be reinstated in the fire department. Time spent in such services will be credited to their seniority in the fire department and they will receive veteran's preference on examinations.

Men with medical discharges must be examined by the police and fire surgeon.

Frank Egenreither, Chief, St. Louis, Mo.: Firemen now in the armed forces will be reinstated in the fire department and given veteran's preference in promotional examinations.

Men with medical discharges must have a physical examination before they are reinstated.

George T. Morgan, Chief, Wilmington, Dela.: Firemen now in the armed forces will be reinstated providing they report for duty within ninety days after their discharge. Under state law their time in the armed forces will be credited to their seniority in the fire department.

No preference is given in promotional examinations.

Men with medical discharges must pass a physical examination by the department physician.

William C. Garvin, Chief, Yonkers, N. Y.: Former firemen now in the armed services will be reinstated immediately upon application. If their pension contributions are paid up their time in the armed forces will be credited to their seniority in the fire department.

They will be given veteran's preference in promotions.

Men with medical discharges are reinstated immediately upon application. Then they may apply for a physical disability discharge and go on pension if their pension contributions are paid up in full.

Thomas J. Phelan, Chief, Trenton, N. J.: If physically and mentally fit, former firemen now in the armed services will be reinstated in the fire department and will be given credit for service in the army or navy towards their seniority.

Leo B. Barry, Chief, Utica, N. Y.: Former firemen now in the armed services will be reinstated in the fire department when they are mustered out. Time spent in the armed services will apply towards their seniority in the fire department. Under State law, preference will be given to veterans on promotional examinations.

If his disability does not hinder him in the performance of his duties, a medical discharged fireman will be reinstated after a physical examination.

Fred W. Goeglein, Chief, Fort Wayne, Ind.: Men mustered out of the armed forces will be reinstated in the fire department and will be credited with the time spent in uniform towards their seniority. If they are as efficient as the rest of the men seeking a promotion, they will be given preference.

Men with medical discharges must pass an examination by the fire department doctor; otherwise they will be placed on pension.

J. F. Finnegan, Chief, Richmond, Va.: Men mustered out of the armed services will be reinstated in the fire department if they pass a physical examination. Time spent in the armed forces will count towards their seniority in the fire department and they will be given veteran's preference in promotional examinations.

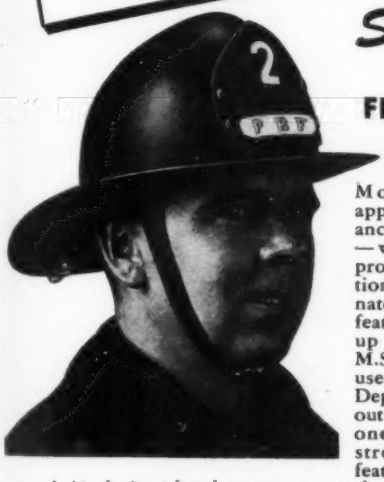
William F. Cowden, Chief, Philadelphia, Pa.: Former firemen in the armed forces will be reinstated in the department. Time spent in such service will be credited to their fire de-

M·S·A SAFETY EQUIPMENT

SERVING THE FIREMEN WITH DEPENDABLE PROTECTION ON THE JOB!

Ask for the details on the Complete M.S.A. Line

M·S·A Streamline FIREMAN'S HELMET



Modern, trim in appearance, well-balanced, light in weight—with the time-proved head protection of strong laminated bakelite! These features are summed up in this popular M.S.A. Helmet, widely used by progressive Departments throughout the country. The one-piece molded, streamlined helmet features a long rear brim designed to keep water, sparks, and embers away from the neck, and a reinforcing ridge on the crown that aids in deflecting falling objects and adds to the appearance of the helmet. Shock-absorbing inner hammock and soft leather sweatband assure easy-wearing comfort. Complete details in Bulletin No. DX-5.

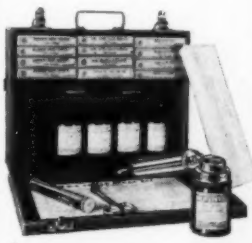
M·S·A All-Service GAS MASK

WITH THE MODEL S CANNISTER

(Bureau of Mines Approved)

Protection against all poisonous industrial gases, toxic, smokes, and fumes—singly or in combinations (including carbon monoxide)—is provided for the fireman by this Mask, wherever sufficient oxygen is present to support life. New Model S canister has large-area filtering element for toxic smokes, and fumes. All-vision facepiece assures unobstructed vision and comfortable fit. Bulletin No. EA-8.

M·S·A FOILLE BURN SPRAY KIT



Prompt and effective emergency treatment of burns is made possible by this specialized kit. Efficient metal spray gun applies "Foille for Burns" quickly over the affected area, relieving pain and shock, hastening healing. Ample supplies of Foille in jars connecting to spray gun; first aid dressings and accessories are included. Request Bulletin FA-73.

THE H·H INHALATOR

The premier instrument for resuscitation of victims of smoke, gas, electric shock, and drowning—used in conjunction with artificial respiration. Famous for many years in fire department service, the H-H Inhalator safely, gently, and naturally supplies oxygen-carbon dioxide mixture according to demand of the patient's lungs. Operation is simple, effective, readily understood and applied. Ask for Bulletin No. CA-9.

FIRE DEPT. FIRST AID KITS

Specialized fire department kits are available in 24 and 36 unit sizes, containing unit-packaged assortments of necessary materials, each package including one or more complete treatments for injuries that can be applied without waste. Easy to use and maintain, these kits are sturdily constructed, dustproof, and weatherproof.

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS • PITTSBURGH, PA.

District Representatives in Principal Cities

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MINE SAFETY APPLIANCES COMPANY OF CANADA, LIMITED

TORONTO . . . MONTREAL . . . CALGARY . . . NEW GLASGOW, N. S.

HYDRANTS VALVES and Pipe Line Accessories

A. W. W. A. HYDRANTS
Underwriters Approved

Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

SPECIAL TRAFFIC MODEL (shown at right) is designed to yield at ground line under impact, repair being simply renewal of breakable bolts and breakable coupling on stem. Dry top, revolving head, easy to lubricate. High efficiency because barrel diameter not reduced and there are no working parts or obstructions in waterway.

VALVES: A. W. W. A. types, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outside screw and yoke; or with sliding stem and lever. Also furnished hydraulically operated. Square Bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

partment. Time spent in such service will be credited to their fire department seniority and they will be given veteran's preference in examinations. Men with medical discharges will be taken back and detailed to such positions as dispatchers, etc.

Howard Travers, Chief, Baltimore, Md.: Men now in the armed services will be reinstated in the fire department if they can pass a physical examination. Time spent in the Army or Navy will be credited towards their seniority in the fire department. No preference is given in promotional examinations.

James E. Granger, Chief, Cleveland, Ohio: Firemen now in the armed forces will be reinstated if they pass a physical examination. Time spent in the service will be credited to their seniority in the fire department.

John Krusenklaus, Chief, Louisville, Ky.: Former firemen in the armed forces will be reinstated in the fire department when they are mustered out. Time spent in uniform will be credited to their fire department seniority.

Men with medical discharges must have a physical examination by city doctor before they can be reinstated.

* * *

The following reply is in answer to a previous question on the post-war value of military fire training.

Homer F. Lyles, Chief, Houston, Tex.: At the instigation of Chief Jay W. Stevens, Bureau of Fire Prevention, National Board of Fire Underwriters, and with the wholehearted approval of our City Manager, in company with Chief L. M. Funk of the Dallas Fire Department, I left Houston on a twenty-three day tour of the West Coast, during which we visited forty cities and towns in that section, gathering much valuable information on the fire service. In the course of the tour we visited a number of Army and Navy installations and talked with a large number of servicemen engaged in fire prevention and fire fighting training. In addition, Chief Stevens directed our attention to many of the fine points involved in the training of these men, and from this basis, I have reached the following conclusions.

Many new hazards have developed as a result of this war, and there has been extensive advancement in combat methods and fire fighting equipment with many millions of dollars expended by the United States Government in the training of personnel. Fire prevention has come in for its just share of this expenditure with improved methods of operation. The training accorded to the men in the armed services has been extensive and hundreds of them have had actual fire fighting experience under all sorts of conditions, training and experience which no city could possibly provide at any time.

My attention was directed to conditions involving fires on naval vessels which present, in many cases, great difficulties to those engaged in extinguishing operations. These fires involve all kinds of inflammables and explosives, and in many cases occur in areas where there is a deficiency of oxygen, with poison gases present and where the heat presents a real major hazard to those engaged in fire fighting operations. There are so many points connected with a digest of the training given to these men that it would take too much space to fully present the subject as I see it. However, I do want to mention the following:

1. Thousands of young men will be available for the fire service when the war ends. These men will have the best possible training and experience both in fire prevention and fire suppression.

2. Cities with harbors requiring fire boat protection will find many men who have had actual experience in fire fighting aboard ships and who are both expert mechanics as well as navigators.

3. Many of the men will be skilled in the operation of two-way radio.

4. The average service fire fighter is experienced in first aid.

New Type of Fireboat for Coast Guard

This fireboat, one of a number that will be used at Manila, and other Pacific ports, by the Coast Guard, has a capacity of 2,000 g.p.m. at 120 pounds pressure. The craft is 40 feet in length, and is provided with a perforated pipe system of sprays which protects the boat against fire while in operation.

NOW YOU CAN GET THEM!

The restrictions on metals for Invincible Nozzles are being lifted. At long last you can order the world's finest and most effective nozzles, with a view to getting them without any great delay.

Invincible Nozzles were the first of their type in the fire service. Through the years they have been constantly perfected and today's Invincible Nozzles are the champion of them all—bar none. Make it a point to specify Invincible Nozzles on all new pumpers.

F. N. McINTIRE BRASS WORKS
221 HIGH STREET BOSTON, MASS.

INVINCIBLE NOZZLES

•

Important!

To avoid any further delay, due to prior orders, we strongly urge you to let us know your requirements NOW, so that we can insure your getting yours when you expect them.

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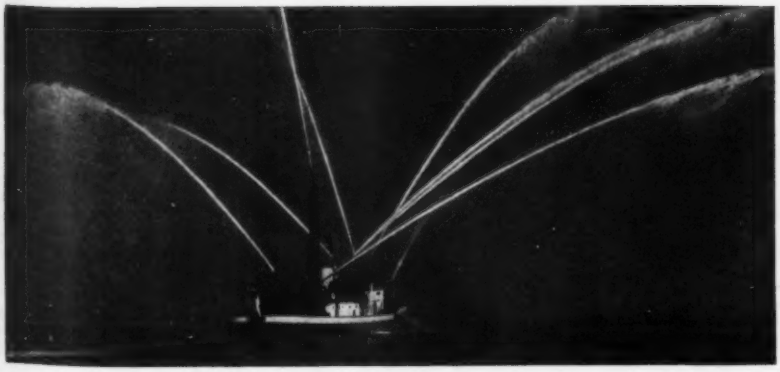

NEW YORK CITY has nine Invincible Nozzles on its million dollar fireboat, "FIRE FIGHTER". These same nozzles are to be found on government vessels on all seven seas, and, of course, in hundreds of fire departments. The first nozzle of its type—and the best.

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Emergency

CUTTING EQUIPMENT

AN INVALUABLE OUTFIT FOR FIRE DEPARTMENT USE

Wearing Unit light in weight, easily adjusted, very convenient to use

KEROTEST Emergency Cutting equipment enables you to cut away steel barriers in a few minutes . . . to get to the source of a fire quickly . . . to make a rescue that by any other method of cutting steel would require hours of time. Enthusiastically approved by the country's leading Fire Chiefs.

The entire unit is self-contained, complete with pressure proved cylinders, regulators, hose and non-back-fire cutting torch all comfortably mounted on a special padded vest, ready at an instant's notice.

The wearer's legs, arms and hands are entirely free at all times, as all parts of the Emergency Cutting Apparatus are strapped close to the body. Firemen can climb ladders and work in very close quarters without the slightest inconvenience.

KEROTEST MANUFACTURING COMPANY

PITTSBURGH 22, PENNA.

5. These men will be trained in the use of gas masks, smoke masks and the new breathing apparatus now used by the armed services.

6. Training has been extensive in the handling of fire involving gases, explosives and inflammables, many of which have been developed during this war.

These men have been trained by the best and most experienced men available, and the fire service will profit extensively from this training and the actual experience which they have gained.

Edward C. Palmer, Fire Marshal, Grand Rapids, Mich.: If the men who are now in the armed services and who are receiving instruction and training in fire fighting, again return to civilian life and apply for appointment to the fire service, their experience and training will qualify them as good firemen.

Therefore, these men upon returning and entering the fire service in any fire department should make better firemen to start with than the men who never had any instruction or training.

* * *

The following replies are in answer to a question on the merits of fog and spray nozzles.

Frank Bennett, Chief, Durham, N. C.: We use a fog nozzle on all first lines of 2½-inch hose and also on booster hose. The nozzle we use gives a small straight solid stream first and then a spray if needed.

They have been very effective in our department. We have used them on various types of fires, excepting electrical motors, etc.

Leo J. Urbanski, Chief, St. Joseph, Mo.: We use fog nozzles quite extensively in our department and have found them to be very effective, providing sufficient pressure is available.

We have used them on every type of fire and upon almost every occasion they have proved their worth, especially in driving back the smoke and forming an insulation against extreme heat, when fighting basement fires.

E. L. Mathews, Chief, Tuscaloosa, Ala.: We find fog nozzles very effective on gas and oil fires, especially the type of nozzle that throws a solid stream and an spray at the same time. We find spray very helpful in getting close to a hot fire. So far we haven't used a fog nozzle on a basement fire. However, I am of the opinion that they they would be far better than a nozzle with a solid stream. We use the regular cellar and basement nozzles and up to the present time have had very good results with them. For certain types of inside fires, the fog and spray nozzles are very good. They drive out the heat and also extinguish the fire at the same time.

I. D. Merrick, Chief, Poughkeepsie, N. Y.: We use spray nozzles in our department and have found them very effective on certain types of fires. On an open vat type of oil fire we have attained good results. The use of a spray nozzle on fires which have not gained too much headway, is a big factor in preventing excessive water damage. However our most effective use is on cellar fires. We find, if it is possible to vent one end of the cellar and approach the fire from another source with a spray, we are able to enter and locate the base of the fire much more quickly. We have also used it from within the cellar at an open window or door to relieve heat and smoke. In this respect it acts as an exhaust fan.

C. L. Bolz, Chief, Pasadena, Cal.: Each engine company carries one or more fog nozzles and at least one overshot adapter. We have found them very effective on inflammable and volatile liquids. Spray for grass and brush fires has proven very effective. We have a nozzle which can be turned from spray to fog for use on other fires depending on conditions and extent of fire.

The advantages of fog over straight streams are: 1. More and quicker absorption of heat. 2. Faster extinguishment with less water damage. 3. More protection for nozzlemen against heat. 4. More area coverage. 5. Less "back kick," therefore easier to handle.

From the above, it should not be construed that we believe fog is a "cure-all" for all fires. It very definitely is far superior, in our opinion, under certain conditions, and if properly applied. However, where larger quantities of water are needed or deep penetration is desired, the fog may not be as efficient. It may even here be used as a protecting cover for the nozzlemen if necessary.

Henry J. Jackson, Fire Chief, Ontario Army Air Field, Ontario, Cal.: In this department we use spray or fog nozzles almost entirely. We have found them very effective.

Our calls are principally to airplane crashes, but we also have used fog nozzles on structural fires, especially inside fires.

Fog is definitely the thing for basement fires. Less damage is caused than from a straight stream, and a larger area is covered. It the same time protection from heat is furnished the nozzlemen.

We have used all types of fog nozzles but are having excellent luck with some we have devised locally for use on booster lines and 1½-inch lines.

The fog we are using is what I would call "flat." We have done an almost perfect job to date.

With this flat fog we can enter almost any fire to make rescues. In a fire involving a crashed gasoline truck, airplanes, etc., where flammable liquids are involved, with the aid of this flat fog you can push the fire around almost any place you wish.

This is most interesting work, but I believe there is still plenty of room for improvement as far as nozzles are concerned. I believe all departments should have some fog equipment for fighting fires involving flammable liquids.

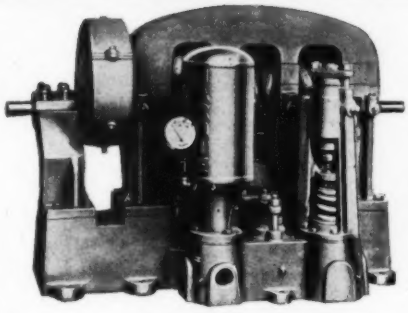
* * *

The following replies are in answer to the previous question on employment of firemen on their off-shifts.

Walter S. Blanton, Chief, Savannah, Ga.: The employment of firemen in defense industries is a bad practice, but the Fire Committee permits it so long as it does not interfere with their duties as firemen. It causes a man to lose interest in the work of the fire department.

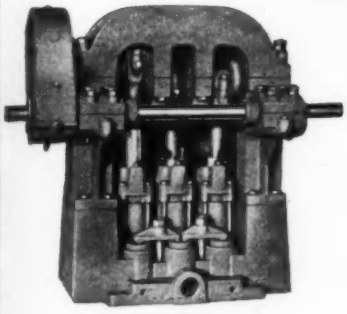
In my opinion, firemen doing defense work should not be entitled to

HARDIE PUMPS & GUNS



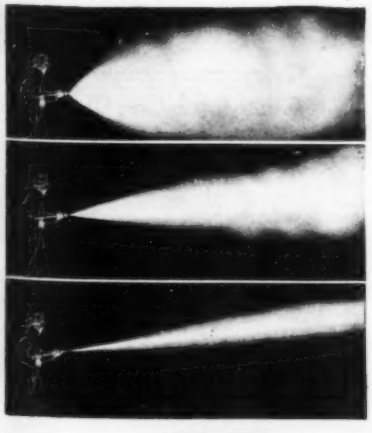
This Hardie LCXA pump delivers 60 gallons per minute at 130 R.P.M. with nozzle pressure at 800 P.S.I.

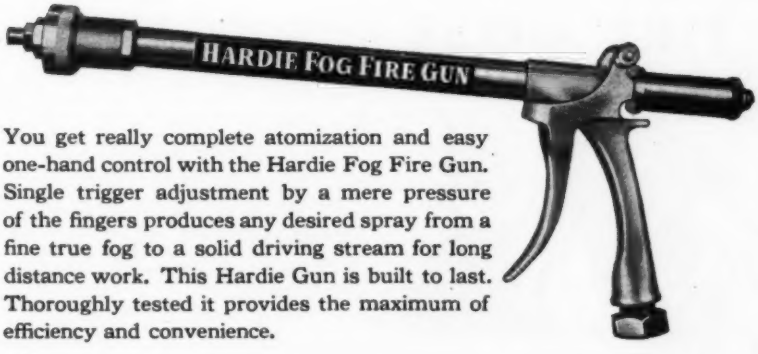
For Fog Fire Fighters



Above the Hardie XCXX pump delivers 35 gallons per minute at 118 R.P.M. with nozzle pressure of 800 P.S.I.

● 800 P.S.I. is an easy score for a Hardie High Pressure Fog Fire Fighter Pump. Hardie pumps give you 800 P.S.I. at slow speed, smoothly, quickly, continuously. There is no need to run a Hardie pump at excessive speed to get 800 P.S.I. for every Hardie pump is designed and built to deliver that pressure easily and for long sustained periods of operation. The Big Strong Hardie High Pressure pumps are used by leading manufacturers of fire control equipment. Specify a Hardie pump and get the maximum performance from the Fog Fire Fighter you buy.





You get really complete atomization and easy one-hand control with the Hardie Fog Fire Gun. Single trigger adjustment by a mere pressure of the fingers produces any desired spray from a fine true fog to a solid driving stream for long distance work. This Hardie Gun is built to last. Thoroughly tested it provides the maximum of efficiency and convenience.

THE HARDIE MFG. COMPANY

Los Angeles, Calif. Hudson, Mich. Portland, Oregon

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51st YEAR

THE MANHATTAN RUBBER MFG. DIVISION of RAYBESTOS-MANHATTAN, INC.
Executive Offices and Factories, Passaic, N. J.

full department pension rights if injured while engaged in such work.

* * *

The following replies are in answer to a previous question on estimating fire losses.

Edward Grenfell, Chief, Portland, Ore.: Preliminary estimates of losses are made for local publicity by the fire investigator while investigating the fire. Owners of buildings involved, or their agents, and the occupants affected, are contacted relative to values, insurance coverage, etc., during the investigation, which enables us to make a close estimate of values involved and loss sustained for immediate release to newspapers.

The estimates and information, together with the cause and all other facts pertaining to the fire are then entered on the fire record card.

In Portland, Oregon, adjusters are required to send fire loss reports to the fire marshal, giving data relative to values involved, insurance coverage, losses and amount paid the assured. The exact amounts are then entered on the fire record card in the fire marshal's office, indexed and filed and used for compiling monthly and annual fire reports. Where loss paid by adjuster is unreasonably in excess of estimate made by the fire department at the time of fire, an investigation is made, and if it appears that the loss has been overpaid, the State Insurance Commissioner is notified and asked to take such action as the law provides.

Walter S. Blanton, Chief, Savannah, Ga.: Loss figures are taken from insurance adjusters if the property is insured. We find that fire department estimates are reasonably correct.

Derivation of the Term "Fire Plug"

Recently I came across what I imagine was the origin of the term "fire plug." Although it turned up far from the states where it is commonly used today, it is as reasonable an explanation as I have found. The term is not used here in England and hasn't been used in the modern age of fire fighting. At any rate, there would be no need for the term here, as there are no post hydrants used.

It started back in 1707 in the reign of Queen Anne. At this time there were acts created that deemed that the church parishes were to be responsible for supplying tools and equipment for the purpose of combating fires that might occur in their individual areas. It further stated that a warden should be appointed in each parish to be responsible for these tools.

It is here that the mention of the fire plug comes in. As was true in the states the first water mains were of wooden logs and at regular intervals in this system were wooden plugs inserted into the mains. These plugs were about two or three inches in diameter and tapered at one end. They were driven into the mains. When the occasion arose and water was needed, one of the tools that was kept by the wardens came into use. This tool was a sharp, pointed instrument that was driven into the plug to remove same. After the plug was removed a tapered pipe with threads on the other end was driven into the hole. A hose was then put on the other end.

Of course, the "first due' 'was bound to get wet, but as has often been quoted, "those were the days of wooden hydrants and iron men." Each one of these plugs had a wooden box sunken around it to facilitate finding it. These plugs were in common use and mentioned until 1847 and beyond. During the Blitz, some of the old iron mains were brought into use in Bristol and the old plug was found still in use there.

A. H. SELLECK

Explosion of Metallic Dust Causes Fire

Six persons are dead and 34 received second and third degree burns as the result of an explosion of undetermined origin on June 30 at the plant of the Aluminum Company of America in Bridgeport, Conn. The victims were all employes of the company.

The blast, according to Fire Chief Martin J. Hayden, followed a small blaze which workmen tried to extinguish and occurred in the trimming department when sparks from a grinding machine resulted in explosion of aluminum and magnesium grindings.

The alarm was sounded from the Aluminum Company's private box, No. 144, which brought Engines 1, 3 and 9; Truck Companies 3 and 5, and Squad 5 to the scene. When firemen arrived at the plant they found flames coming out of all windows on the first floor, which were shattered by the force of the explosion. One of the victims was killed instantly while the other five died within three days after being taken to hospitals.

One of the men seriously injured was Emil Dennert, brother of Fire Chief Charles Dennert of the Westport Fire department.

Damage was estimated to be $50,000 to materials and to the plant and equipment.

TOM MAGNER

One Match Can Do It

(*Continued from page 569*)

Solvent was then poured on about two square yards of shavings. A lighted match was dropped on this pile; there was a sudden flash of flame which quickly spread into a roaring fire. In a few seconds, the flames reached a height of approximately fifteen feet. The demonstration proved, conclusively, that shavings and solvent made a dangerous combination, and only a tiny source of ignition was needed to start a disastrous fire.

The practice of using shavings as an absorbant is common in many factories. The shavings, alone, constitute a definite fire hazard, but in combination with burnable liquids, they present a hazard that should not be tolerated by factory management.

Further tests were made using prepared absorbants. The results of some of these tests were startling. Chief Welch urges every plant manager, who is using an absorbant of any kind, to make his own test and make certain that the absorbant agent and the liquid do not create a serious fire hazard.

Added Quality MEANS LONGER FIRE PROTECTION....

Republic Fire Hose

Republic technologists have now put added wear and pressure resistance into the always-high-quality Republic brand Fire Fighting Hose. The cotton jackets are not only heavier and of more rugged yarn, but are so designed to complement one another and make a more homogeneous structure than ever. This superior construction may be further improved for long use by the treatment of the cotton jackets with our exclusive Provar Process—protection against mildew, rot and vermin. Consult your Republic Distributor on Fire Hose and Chemical Hose.

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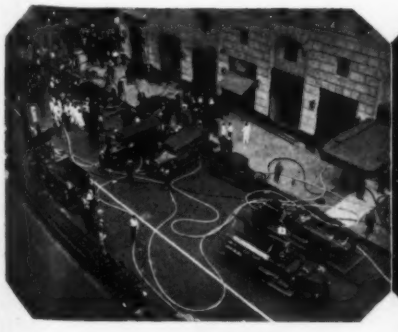

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LEE DELUXE TIRES AND TUBES
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Avoid DANGER to Property
STOP Fire!

SAVE CRITICAL WAR MATERIAL

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A complete line of UNDERWRITERS LABORATORIES Labeled FIRE EXTINGUISHERS.

HELP SAVE LIVES AND PROPERTY

Get Fyr-Fyters for safety's sake. We advise and serve war production plants, public institutions, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

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Dept. 101, Dayton 1, Ohio

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CIRCUL-AIR
FIRE HOSE DRYER

- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
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EXTRA

O.C.D. Apparatus

THE following letter from Mr. G. A. Bonnstetter, Director of the newly created Office of Civilian Defense Property of the Department of Commerce, comes at a most opportune time when, as stated in the leading editorial in this issue of FIRE ENGINEERING, there is so much uncertainty and confusion over the final disposition of OCD war emergency fire fighting apparatus and equipment.

The editors regret that Mr. Bonnstetter's comprehensive communication, answering the several questions asked of the old Office of Civilian Defense and the Department of Commerce, was received after the editorial above referred to had gone to press.

We desire to thank the Director of the Office of Civilian Defense Property for his letter and information. It should be said in his behalf, and that of Col. Edward L. White, former Chief of the Protective Property Division of the old Office of Civilian Defense, that whatever criticisms we may have directed at that organization in the past were in no wise reflections on their work, or their cooperation with the fire service.

The editors are pleased to publish Mr. Bonnstetter's letter in its entirety, without interpolations or comment. It is unnecessary to repeat the questions which Mr. Bonnstetter answers; his replies indicate the nature of our queries.

We are sure this timely information will serve to dispel many of the existing misunderstandings and misapprehensions.—EDITOR.

Department of Commerce
Office of Civilian Defense Property
Washington 25, D. C.
July 26, 1945.

Dear Mr. Shepperd:

Your letter of July 12 addressed to the Secretary of Commerce, concerning disposition of OCD protective property, has been referred to me for reply.

As you may know, there has been created within the Department of Commerce the "Office of Civilian Defense Property," which will administer the property in question and exercise the functions with respect thereto in conformance with the Surplus Property Act of 1944. Because of the current war situation all protective property under the control of this Office is considered to be surplus, and policies and procedures have been developed in cooperation with the Surplus Property Board with respect to actual disposition of the property.

This Office will report to the Office of Surplus Property OCD protective property loaned to communities, which such communities desire to purchase. The Office of Surplus Property will give those communities an opportunity to purchase the property they desire at established prices.

Any property which is not purchased by the community now having it on loan will be available for purchase by States and communities or institutions and organizations entitled to consideration or priority under Section 13 of the Surplus Property Act of 1944. Complete information regarding our program will be widely disseminated. A catalog will be distributed which will list and describe as completely as feasible all items of protective property under the control of the Office of Civilian Defense Property. With the catalog will be furnished OCDP Forms No. 303, on which State or local governments, institutions and organizations can indicate their desire to purchase property listed in the catalog.

The expressions of intent to purchase on the forms mentioned above will be forwarded by this Office to the Office of Surplus Property, together with reports of surplus to cover the intents to purchase. Such will be given due consideration in the actual disposal by the Office of Surplus Property of the property reported.

Complete information as to our policy and procedures is now being printed in bulletin form and a copy will be forwarded to you when available. If additional copies are desired, please advise this Office.

In reply to your specific questions, the following answers may be given to inquiries reaching your office. The answers have been arranged in the order in which you listed your questions.

(1) Each Local Property Officer will be furnished in the very near future with forms on which he can indicate the quantity of each item of property which the community desires to purchase and which is available for immediate return to the Federal Government.

a. and b. By order of the Secretary of Commerce this Office has assumed all responsibilities and authority in connection with protective property which was formerly under the control of the Office of Civilian Defense.

(2) No further reallocations or loans of OCD protective property or distribution thereof may properly be made by either a fire department, the Local Property Officer or any community official. All such property must either be purchased by the communities or returned to the Federal Government. Of course, after purchase, title passes to the purchaser and any disposition desired can be made by the purchaser. It is pointed out, however, that until the sale is consummated, title remains with the Federal Government and no distribution of property should be made.

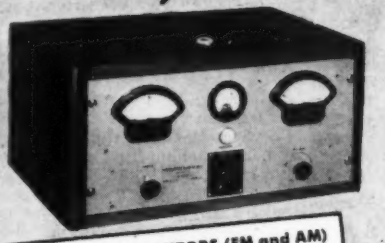
(3) If a fire department now has custody on a loan basis of OCD protective equipment and desires to purchase it, the fire department may retain the property until the sale is either consummated, at which time title would pass to the fire department or the community, or until such time as it is determined that the sale will not be made and the property is recovered by the Federal Government.

Our answer to your Question No. 1 also replies to b. hereunder.

(4) This Office has no knowledge of any unanswered communication advising that a fire department or a community does not want OCD pumping

Complete Matched
FM and AM
RADIO COMMUNICATION EQUIPMENT

Engineered and Built by Doolittle



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Direct reading. No charts or complicated calculations necessary. Models available for 110 Volt A.C. or battery operated portable use. Meet FCC requirements.

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Models up to 60 watts output. Crystal controlled. Complete with Transmitter, Receiver, Power Supply and all Accessories.

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Sizes available from ⅞" to 3" diameter. Seamless copper tubing with wide variety of sealed terminals for any application. • STATION ANTENNAE of various types available to suit your requirements.

TIME TELLS. Equipment engineered and built by DOOLITTLE years ago still serves today . . . 24 hours a day . . . without interruption.

That's because DOOLITTLE pioneering work back in the days of emergency radio's infancy was basically sound.

When war came, DOOLITTLE engineering and production facilities were enlisted for the *Naval Aircraft Factory* and the *Bureau of Aeronautics.*

Turn all this experience to your advantage. Build the success of your emergency forces around FM or AM equipment *completely engineered, built and matched by DOOLITTLE.*

With such equipment in your service . . . many benefits are yours today . . . and will still be yours years from now!

A FEW OF THE MANY ADVANTAGES
Low Power Consumption • Maximum Coverage • Latest Electrical and Mechanical Design • Compact Easy to Install • Simple to Service Proved Reliability

STATION TRANSMITTERS (FM and AM)
18 available models. Power output up to 1000 watts. Assure maximum efficiency, absolute reliability and economical maintenance. • Station Receivers, Control Units and Accessories to meet your needs.

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Builders of Precision Radio Communication Equipment for Police, Fire, Government, Forestry, Railroad, Public Utility and other emergency services.

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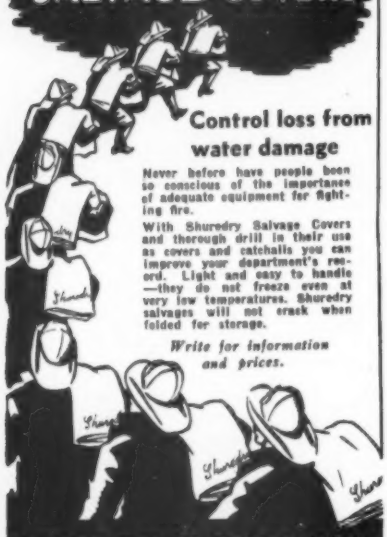

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Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices.

Fulton Bag & Cotton Mills
Manufacturers since 1870
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Spray
MINOR BURNS WITHIN 15 MINUTES

with
Gebauer's TANNIC SPRAY

The element of time is of first importance in the successful treatment of burns. If a burn is treated within 15 minutes after it occurs, the probability of blister formation is reduced to a minimum. But if time is wasted before proper treatment is started, serious complications and infection may follow.

When using Gebauer's TANNIC SPRAY in the treatment of burns, the factors involving time-loss are eliminated. This preparation is a stable solution of tannic acid ready for immediate use. Packaged in a sturdy amber bottle having an automatic dispensing cap, which permits the projection of the solution in the form of a fine jet stream. Upon application the solvent evaporates rapidly, covering the burn with an evenly applied, dry and flexible film of tannic acid.

Gebauer's TANNIC SPRAY is a practical *first* first-aid treatment for first, second, and small area third degree burns. Write for literature.

THE GEBAUER CHEMICAL CO.
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units and equipment in its possession. Until this time, however, it has not been possible to definitely advise as to the final disposition of such property.

a. The municipality or political subdivision to which the loan of property was made and the Local Property Officer remain accountable for the property and will be responsible for its protection, maintenance and return until such property is either sold to the community or political subdivision, or until possession is recovered by the Federal Government.

b. The extent of responsibility and accountability is covered in the certificate and agreement (OCD Forms Nos. 501 or 533), which were executed by the chief executive officer of each community which received a loan of OCD protective property, and is regulated by OCD Regulations No. 1, "Loans of Equipment and Supplies to Civil Authorities." Two copies of these regulations, revised to May 23, 1945, and which have been confirmed by the Secretary of Commerce as the effective regulations of the Office of Civilian Defense Property, are enclosed for your information.

c. The community agreed by execution of the certificate and agreement form mentioned above to be responsible for the storage and maintenance of the property until it was returned to the Federal Government. Storage so as to properly protect the equipment and the maintenance of such equipment is an obligation under the bond of each Local Property Officer.

If any further information is needed, please feel free to call upon me. I wish to assure you of my desire to cooperate in every proper way so as to accomplish an early and orderly disposition of all of the property now under the control of this Office.

Very truly yours,
G. A. BONNSTETTER
Director.

Army Post Firemen Proud of Record

With their record of fire losses maintained at a low cost of $24.50, Colonel George H. Schumacher, commanding officer of the Savannah Army Service Forces Depot, Savannah, Ga., acclaimed that the Depot Fire Department had reason to proudly observe its Third Anniversary which occurred on May 5.

The Fire Department staff consists of twenty-nine members under the direction of Major Robert C. Martin, fire marshal, with I. T. Goodrich as Chief. The fire station, located on the reservation, is equipped with all modern fire-fighting equipment, a fire-alarm system, and an area where the firemen eat and sleep while on duty on their alternate twenty-four-hour shifts.

Special fire department details make regular day and night inspections throughout the post, checking against any possible hazards that might destroy the vast quantities of supplies stored there for shipment to the fighting forces.

In the past three years the fire department has made over 525,000 fire inspections. In addition to their regular duties, they are continuously trained in fire-fighting techniques, fire prevention and air-raid protection. They are frequently given tests on these subjects as a matter of alertness or in cases of any misunderstanding.

Besides Chief Goodrich, members of the fire department are J. C. Waters and J. L. Summerlin, assistant chiefs; H. C. Graham and B. F. Purcell, fire inspectors; A. Y. Britt, W. W. Purvis, W. B. Cowart and A. B. Hand, senior firemen; William Hill, C. H. Crosby, R. H. Kemp, T. E. Lindsey, W. V. McElveen, J. McNeely, J. W. Roberts, S. S. Smith, W. F. Sports, H. C. Hall, C. M. Hamilton, Eugene Hunt, J. T. Jackson, A. T. Nation, W. Odom, J. C. Ryals, C. C. Baker, C. G. Simons, F. L. Wilson and C. B. Jones, fire fighters.

Oswego Lumber Yard Swept by Fire

Fire, origin unknown, on July 5, destroyed the main yard and office of the Neal and O'Brien Lumber Company, located on West Second Street, a block and a half from the main business section of Oswego, New York, causing a loss of $250,000.

The fire was discovered at 12:30 P. M. by a passerby who verbally transmitted the alarm. An alarm was sent from Box 71 about the same time.

When the fireman from a truck company a block away responded to the verbal alarm, flames were already breaking through the roof.

The fire started in the main office and had been burning for some time when discovered.

The Oswego Fire Department, assisted by the Fort Ontario Fire Department under the direction of Chief George Paino, brought the fire under control several hours later.

Consumed in the flames were roofing materials, dressed lumber, paints, hardware, two trucks and a house adjacent to the yard. Another house was saved by firemen.

An A. & P. supermarket was wrecked when a building wall let go and fell through its roof, leaving a hole about twenty by forty feet in area.

Fireman Harry Devens was overcome by heat exhaustion and fireman Joseph Schurr sprained his ankle. A volunteer was cut by glass from the store window shattered when the roof caved in.

Discharge Badges for Overseas Fire Fighters

Official discharge badges now are being distributed to members of the Corps of Canadian Fire Fighters in recognition of their three years' service overseas, the War Services Department announced.

The specially designed badges are in the form of a silver button with an impeller—official of the National Fire Service in the United Kingdom—in the centre in red enamel. Encircling it are the words "Canadian Fire Fighters, 1942-45" and the whole design is surmounted by a crown with the word "overseas" underneath.

The corps, which reached a strength of just over 400 was recruited from 107 municipalities in 1942 at the request of the British Government. The men served continuously until it was decided on the advice of the British Government that conditions no longer warranted their retention in the United Kingdom as part of the protection against enemy attacks.

ROY CARMICHAEL,
UTPS Correspondent.

10,000 GALS. OF GASOLINE FLASHES INTO ROARING FIRE *and* WaterFOG PUTS OUT THE FIRE

A derailed tank car . . . pulling down the high-tension wires of the electrified system . . . started a rip-roaring fire on one of the country's heaviest-traveled rail routs.

So furious was the blaze that the heavy steel towers were twisted partially from their bases and many feet of rail were warped by the intense heat. Yet a skillful attack by New Haven's fire department, under direction of Chief Paul P. Heinz plus the use of Rockwood WaterFOG nozzles, had the fire checked in 15 minutes . . . confined to a small area in 25 minutes . . . and out in 40.

WaterFOG is used extensively by the New Haven fire department for oil, electrical and other types of fires. Adequate WaterFOG equipment and thorough training by Chief Heinz in the use of this modern method of fire fighting made possible quick extinguishment of this fire.

Rockwood WaterFOG is used by hundreds of fire departments and industrial firms to guard against fires. Rockwood-engineered applications, ranging from transformers to engine test cells, from paint shops to Hortonspheres, are approved by Underwriters' Laboratories and Associated Factory Mutuals. Write for Bulletin 123. Colored movies (16 mm.) showing tests of Rockwood WaterFOG are available to business executives.

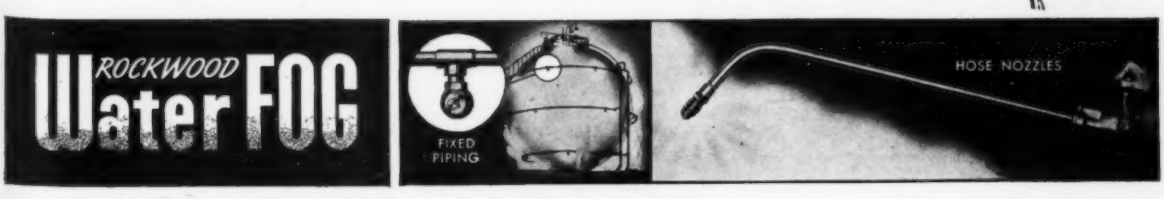
ROCKWOOD SPRINKLER COMPANY
54 Harlow Street, Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

Fire at its height when apparatus arrived

Fire under control of WaterFOG 15 minutes later

Fire out in 40 minutes

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



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TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and
THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE!
We can now supply old type ¾ Felt-lined Firemen's Boots.
JANESVILLE APPAREL CO.
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Northern N. Y. Firemen Meet

The Northern New York Volunteer Firemen's Association, Inc., held its 49th annual convention in Lowville, N. Y., on June 9. A parade, in which 45 departments were represented, was included. The association embraces the counties of St. Lawrence, Lewis, Jefferson, Franklin and Hamilton.

James J. Doyle, Jr., chief of the Potsdam, N. Y., fire department, was elected president of the organization to succeed Harvey W. Gallup, Lowville. Other officers named were P. H. McCarthy, Tupper Lake, first vice-president; Howard Grunert, West Carthage mayor and fire chief, second vice-president; Roy W. Countryman, Massena, secretary, and Clarence J. Roberts, Carthage, treasurer.

Potsdam was selected as the site of the 1946 convention and a special program is being planned since the year marks the 50th anniversary of the association.

The delegates held a memorial service for 15 members who died during the past year, four of whom were killed in action, and also heard a short address by Raymond Villeneuve, a Tupper Lake fireman, who was blinded in both eyes by German artillery fire in North Africa two years ago. Villeneuve, a guest at the convention, was a ladder man with the Tupper Lake racing team and the winner of many contests at district and state conventions. Other speakers on the program included Levi L. Rogers, superintendent of the state firemen's home at Hudson, and Seth T. Cole, Albany, attorney for the state firemen's association.

SANFORD DEWEY

Little Water—Lumber Mill Burns

The $1,000,000 fire in the Pemberton Lumber & Millwork Corporation, Mount Holly, N. J., in April, starting from a short-circuit in a paint-shop transformer, gave firemen a twelve hour battle, destroyed the paint shop, a 460 x 200 feet frame building, ten boxcars loaded with prefabricated buildings destined for England and France, and several acres of lumber.

Twenty-three pieces of fire apparatus and nearly 20,000 feet of hose were used by firemen from twelve communities: Pemberton, Browns Mills, Juliustown, Jobstown, Wrightstown, Mount Holly, Vicentown, Morestown, Burlington, Bordentown, New Egypt and Fort Dix. High school boys were pressed into service to fight fires in surrounding meadowland. One fire company is reported to have pumped continuously for twelve hours from a stream of water and used 65 gallons of gasoline.

The buildings were combustible, unsprinklered, and contained considerable paint thinner. Water supply was deficient, the nearest hydrant being 1500 feet distant.

Fire Fighters to Meet at Charlotte

Charlotte was chosen as the 1946 convention city of the North Carolina division of the International Fire Fighters Association at the closing session of the convention held at Durham, N. C., July 25th.

At the Durham convention opposition was voiced to the Merit System which is operating in several cities in North Carolina. The resolution to this effect is to be drawn and presented by committee appointed to the North Carolina State Federation of Labor. Reason for the opposition, fire fighters expressed at the Durham meeting the opinion that the merit system is being used on a partial basis, which is unfair to the average worker.

Fire fighters of five North Carolina cities make up the North Carolina Division of the International Association of Fire Fighters, Durham, Charlotte, Raleigh, Wilson and Winston-Salem.

In accordance to the regulations of the Office of Defense Transportation, only about twenty-five members attended the Durham convention. J. B. Keeter of Raleigh, president, presided.

Present officers are, in addition to President Keeter: vice-presidents, M. G. Potters of Charlotte, F. H. Warren of Durham, and T. T. Daner of Winston-Salem; secretary-treasurer, W. E. Cherry of Wilmington.

D. G. SPENCER

HARRINGTON
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FIRE ALARM BOX

Truly a high quality box, made of cast aluminum inside and out—making light, easy installation everlastingly free from corrosion.

Equipped with quick action doors, that meet every specific requirement, and are non-interfering of the shunt successive type circuit.

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MOLINE - - - - ILLINOIS

Deficient Water Supply Retards Fire Fighting Efforts in Pemberton Lumber & Millwork Million Dollar Fire.

Hall-Scott Model 470 engine installed in a 1250 gallon Pirsch pumper for Oakland, California, Fire Department.

Test a HALL-SCOTT on the toughest grade in your territory!

You can't "pick your spots" when driving to a fire — but you *can* pick the power to get you there! Hall-Scott Series "400" engines offer the utmost in power for the steepest grades . . . for pick-up after traffic slow downs or turning corners . . . for the handling of 2000 gallon pumpers in 24-48 hour stretches when necessary.

How? Because maximum torque is developed at only 1300 R.P.M. and full rated power at 2000 R.P.M. Low R.P.M. adds life to motors, too, and provides maximum economy because of lower maintenance costs.

Compact, 2190 lb. Hall-Scotts fit under hoods of most present equipment. And, except for complete overhaul, this motor need never be out of action because the unit assembly design permits a part to be serviced while a quickly installed "mate" is doing its work.

Model "400" Series engines are furnished in the following sizes:

Model 470	*Model 480*	*Model 400*
5½" Bore, 6" Stroke	5¾" Bore, 6" Stroke	5¾" Bore, 7" Stroke

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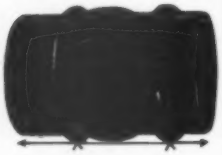
Also we can load 25% more on the apparatus bed actually making an $8,000 truck loaded with Bi-Lateral construction, cheaper than a $7,000 one loaded with other construction.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze) with the swivel protecting feature.



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Watch for our announcement in an early issue of Fire Engineering on our new device for improving our famous Life Belts or bringing up-to-date your old belt. Don't miss this news!

MORRISSEY
MANUFACTURING CO.
AUBURN, N. Y.

The Watch Desk

(*Continued from page* 595)

Pa., pitched in and helped firemen fight a fraternity house fire but after it was over the firemen reported missing: 21 rubber coats, 9 pairs of boots, 8 helmets and even the assistant chief's shield. (Thanks J. W. C.). . . . Hugh McNair sends us an item from an esteemed contemporary which reads: "The Fire Department received the call at 11:30 A. M. and was on the scene laying hose by 11:04 A. M." which is what we call speedy! . . . From contrib' Arthur Chadwick, Schnectady, N. Y., we learn that Edward Bradof, 60, Asst. Chief, Village of Franklin Park F. D., near Chicago, Ill., went to his grave exactly as he had wished, his casket being borne on a fire truck two miles to the cemetery. . . . The 2-alarm fire at Diorio's restaurant, Waterbury, Conn., caught one diner at the half-way mark in his downing of half a dozen clams on the half shell. You can come back after the fire," he was told, but he replied, "I'm taking no chances," as he scooped up the clams and trailed the other patrons out of the door. . . . In Buffalo, N. Y., James Cameron Jr. was badly burned when a blazing can of gasoline was thrown through the open window of his automobile and landed in his lap. He was driving past a parked car, into the carburetor of which two youths were pouring gasoline from a can. The car's motor was running and the gasoline ignited. The youth "unloaded" the flaming can in a hurry—into Cameron's car.

* * *

Bang Goes Her Uppers!

Earle Robinson gets the month's orchid for his yarn about the little old lady of New Brunswick, N. J., 85, who was asked by her friends why she was stepping out without her upper dental plate.

Seems she put the denture on the window sill, while she sat back one afternoon and enjoyed a cigarette—in secret. Seems also, that she mistook the plate for an ashtray an burned a hole clear through the middle.

Toothsome sort of a tale, wot?

* * *

Considerate Citizen Wouldn't Wake Firemen

From Tacoma, Wash., comes the story about a local resident who recently learned for the first time that a fire department operates 24 hours a day—and for free!

Firemen, called to extinguish a routine chimney fire, asked the lady of the house how long the fire had been burning.

"Oh, about two hours, but we tried to keep it down as long as we could," the woman replied.

"Why didn't you call us before?" the astonished smokeaters asked.

"Well, we didn't think you came to work until 8:00 A.M.," the housewife answered. "And besides, we had to be sure we had enough money to pay you." (Credit Asst. Chief Mattingly, Nashville, Tenn., and J. E. G. for this'un.)

* * *

Another "Yankee Clipper"

Thomas Magner, himself a demon clipper of fire service news, sends along a story about Fireman John J. Heckler of the Lordship Fire Station, Stratford, Conn., who's been "going at a merry clip" since 1923, to build up a most comprehensive collection of firemanic news data.

Fireman John J. Heckler, Stratford, Conn., and Part of His Collection of Fire News Items.

Fireman Heckler's collection includes sixteen large volumes of news clippings, all neatly arranged, dated and indexed so he can quickly locate an account of any fire.

According to Tom, the old moss-worn opinion that firemen do nothing in their spare time but smoke a corncob pipe and play pinochle while waiting for the bell to hit just isn't so, if we are to judge by the example set by Fireman Heckler, during his eleven years as a paid fireman.

* * *

False Alarm Causes Near Tragedy

From James G. Wells, Secy. and Asst. Chief, Boght Community Fire Company, Cohoes, N. Y., comes an account of a collision July 12th between Engine 4, Schenectady, N. Y., and a bus which then careened across Van Vranken avenue, that city, to strike another public bus, damaging all three vehicles, as well as a parked automobile. Seventeen persons were injured by the accident, ten necessitating hospitalization. The smashup occurred when a "person or persons unknown" transmitted a malicious false alarm.

Writing about this accident, Chief Wells says, "I feel that fire organizations, local, county, state and international, should endeavor to put forward a program of education . . . perhaps a set of movie reels to be shown with lectures at . . . intervals . . . to all schools and try to educate the youth of the nation to realize the results of this type of crime, or 'prank,' or whatever name you want to give it. . . ." Yes, Chief, and why not go further than the school children, while we're at it?

* * *

Back Up to Get Ahead!

This column has published many a communication of one kind or another from contrib's setting forth in sundry ways "broken records" but here's a new one. It's from constant reader Thomas C. Hayden, Bryn Mawr, Pa., and you can take it with or without the proverbial grain of salt.

"The other day, says T. C. H., "I drove my automobile past our fire house and

efficiency . . . dependability . . .
engineering skill . . . economy . . .
it will pay you to wait for

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like
RAISE *(to erect)* **RAZE** *(to destroy)*
BUT
WOOSTER BRASS always means the BEST in fire equipment supplies.

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When you specify products bearing the TRUMPET trademark, you can SAVE and BANK on SAFETY.

EDDY
Fire Hydrants
Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.
Write for the FACTS.
EDDY VALVE CO., Waterford, N. Y.

SIRENO
PRECISION MADE ELECTRIC SIRENS
THE UTMOST IN DEPENDABILITY AND LONG LIFE
THE SIRENO CO., Inc.
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NEW YORK CITY

SIRENO WITH 7" RED FLASHING LIGHT

on down the main road in our town. When I got two blocks past the fire house I had to come to a stop because of a traffic jam in front of me. Just as I stopped I heard our whistle 'kick off.' Looking around I saw that the road was clear of traffic for two blocks behind me, that is, all the way to the fire house. So I immediately put my car in reverse and backed all the way to the fire house. From this time on I claim to be the only volunteer fireman in the history of the fire service that ever answered an alarm *backwards!*"

All right, the hand-painted thimamajig to T. C. Hayden—and who's next?

* * *

2-11 Fire Evokes Near Gun-Plan

From Richard C. Steinmetz, Mill Mutual clipper-outer, comes a yarn about an angry next door neighbor who drew a fully-loaded shooting iron and threatened I. D. Opat, one night shortly after a 2-11 fire had destroyed the upper half of the old two-story frame structure where Opat lived and had threatened the neighbor's home.

The irate neighbor, Erven J. Kropp, was quickly disarmed by police and chucked in the hoosegow. It appears that Opat was talking with fire officials about the fire when Kropp strode toward him, drew his loaded .38 and shouted: "I always told you that firetrap would burn up some day and hurt me too!"

Kropp said he had complained repeatedly about the building but nothing was done because Opat disclaimed ownership. The latter told police he's held a mortgage on the ramshackle old place since 1930 but never foreclosed and hasn't seen the owner, a woman, since. He lived on the second floor. Firemen said the first floor was littered with paper and trash. First Deputy Fire Marshal Otto C. Dahl estimated the damage at $10,000.

The police quartette are teaching their firemen brothers to sing "Lay That Pistol Down."

182 Years Young

Claiming to be one of the oldest fire companies in continuous service, Haddon, N. J., Fire Company No. 1 has celebrated its 182nd vear.

On March 8, 1764, twenty-three citizens formed what was then called the "Friendship Fire Company." Women had a part in that early organization: the by-laws provided that if a member died "the widow shall be aided and assisted during the time of her widowhood—her duty was to keep the fire buckets in readiness and repair and sent to each fire." Penalties were inflicted for failure to turn out to fires, and meetings, and for failing to care for buckets.

Despite several changes in name, the company has been in continuous service. From 1764 to 1811 it was the Friendship Fire Company; from 1811 to 1857 it was known as the Fire Company of Haddonfield; from 1857 to 1887 it was the Haddonfield Fire Department and from 1887 to the present day it has been the Haddon Fire Company No. 1.

From the original twenty-three "firemen" with their leathern buckets and linen bags, the organization has grown to a department having one ladder truck, four pumpers, one emergency truck and an ambulance.

PORTABLE BATTERY-POWERED FLOODLIGHT!

Almost before the sound of the siren starts to die down, and the firemen pile from the engine —the Chief's order comes: ***"Get to the switch box and cut off the current."*** For the live electricity in a burning building is a very real and ugly danger to property and lives.

And if the current is cut off—what source of light is best for the firemen? Very often the men may use a flashlight—but a flashlight keeps at least one hand busy—and there are so many times when lives may be saved and property damage reduced when ***both*** hands are free.

The solution to this problem has already been suggested by the photograph above. The portable Battery Operated Floodlight, designed and manufactured by the Browne organization, weighs just 12½ pounds and is easily carried right into critical areas. As an auxiliary source of light, it has been widely used in industrial safety departments all over the country. It may be used beside the pumper to light the dial faces and mechanisms. It can be taken right into the burning building—where it will illuminate the dark areas and make work move more quickly, and with greater efficiency. Since this light is self-powered, it can be taken anywhere a man can walk, and gives the fireman full use of both hands when he needs them most.

In short, this portable auxiliary floodlight should be a standard part of every company's equipment. The reflector surface is made of baked white enamel on a scientifically contoured spun steel base. The lamp bulb is optically centered and mounted for greatest lighting efficiency, and the glass front lens is carefully cushioned with a sponge rubber gasket. Available with a wet or dry battery, as specified. For complete information covering prices, terms and delivery, write to the address below.

NOTE: The Portable Battery Powered Floodlight is extremely economical. Its cost is but a fraction of the usual gasoline-powered floodlight. . . . . *For complete details, write Dept. F.*

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MANUFACTURING COMPANY INCORPORATED
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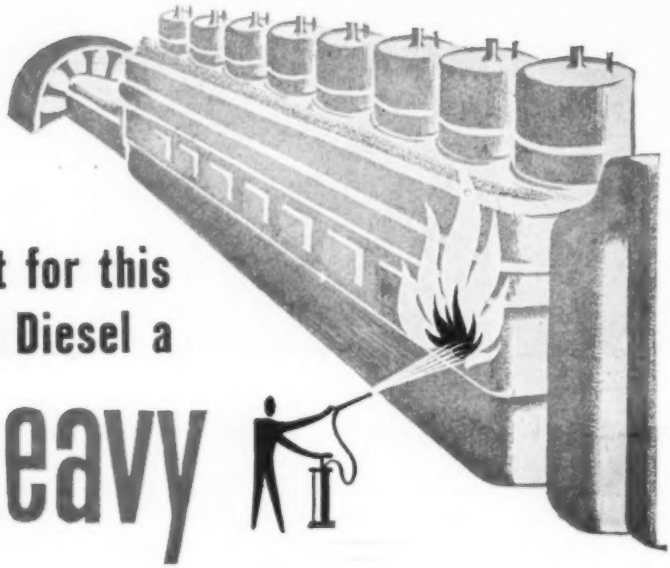
For a small motor fire which might build up to a big blaze a one quart is ample protection.



But for this big Diesel a

heavy duty pyrene

pressure type extinguisher is a must.

The old saw "don't send a boy to do a man's job" applies aptly to fire extinguishers. In these rushing days of new processes, larger equipment, you should carefully check the capacity of your fire extinguishers against the possible job they may have to do. Or perhaps you will want to add more units of the same size extinguishers you are now using. A discussion about your fire hazards with a PYRENE Engineer entails no obligation. Write for details.

BY THE WAY: WHEN DID YOU LAST TEST THE FIRE EXTINGUISHERS IN YOUR HOME?

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AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

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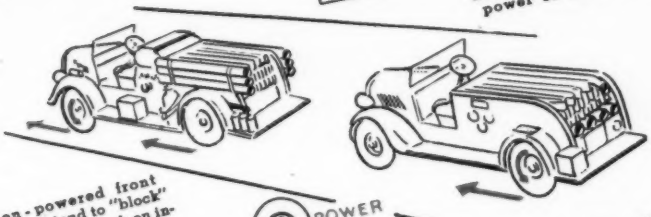

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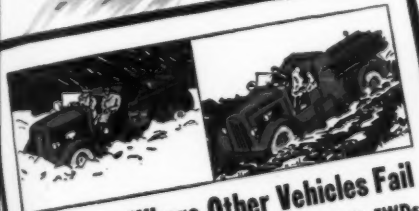
THE FOUR WHEEL DRIVE AUTO COMPANY: Clintonville, Wis.

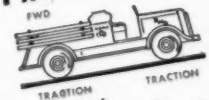
Canadian Factory: Kitchener, Ontario



FWDs Go Where Other Vehicles Fail

NO ROADS TOO TOUGH OR STEEP FOR FWDs

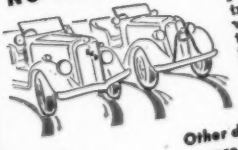
FASTER GET-AWAY



FWD power on all four wheels gets a four-way grip on any road and assures faster get-away.

Other designs, lacking drive on front wheels, lose time in get-away.

NO SKID, NO SLIP, NO SLUE!

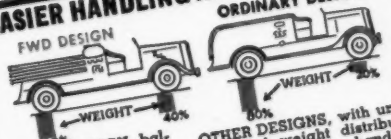


Powered steering traction holds front wheels to direction of turns, thus minimizing skid-danger. Skidding tests conducted on ice show 50% less skidding.

FWD... non-skid.

Other designs more liable to skid.

EASIER HANDLING AT HIGH SPEEDS



FWD DESIGN balances weight on all four wheels . . . assures easy handling at any speed.

OTHER DESIGNS, with unbalanced weight distribution are difficult to handle at high speeds.

QUICK, POSITIVE, SAFE EMERGENCY STOPS

FWDs have two separate and independent 4-wheel braking systems, with brake drums on each wheel. Combined with properly balanced weight distribution, these provide the most effective braking possible.

FWD

FOUR-WHEEL-DRIVE *Fire Apparatus*

GETS TO FIRES *FASTER* and SAFER!

Amazing!

Say Firemen, about fire extinguishing performance of the New Series 4 NAP FOGNOZL*

★ ★ ★

This latest addition to the FOGNOZL* family is the *only* genuine fog nozzle combining all these features:

1. Adjustable water delivery for high velocity fog.
2. Fog volume easily adjusted under full working pressures.
3. Production of true fog of uniform size of water particles at all adjustments.
4. Solid, homogeneous mass of fog produced at all adjustments.
5. High velocity fog tip is removable allowing instant insertion of Fognozl* Extension Applicator.
6. Highly efficient Fognozl* designed straight stream included.
7. Shut-off, fog and straight stream are instantly available by means of the famous Fognozl* floating gland rotary valve operated by one valve handle. It is important that you do not have to go through the straight stream to get the fog.

★ ★ ★

Trademark registered U.S. Pat Off. All Fognozls and Fognozl* equipment fully protected by U. S. and foreign patents allowed and pending.

FOG NOZZLE COMPANY

1520 EAST SLAUSON AVENUE — LOS ANGELES 11, CALIF.

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